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EXPERIMENTAL THERMAL CONDUCTIVITY VALUES FOR HYDROGEN, METHANE, ETHANE AND PROPANE

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Experimental Thermal Conductivity Values for Hydrogen, Methane, Ethane and Propane

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The experimental measurements of thermal conductivity as obtained in a transient hot wire apparatus for hydrogen, methane, ethane and propane are recorded.

Key words: ethane; hot wire; hydrogen; measurements; methane; propane; thermal conductivity; transient.

1. Introduction

New experimental measurements of the thermal conductivity of fluids are always of interest, expecially if the measurement is an absolute one, and if the results are as accurate as those that can be obtained from a transient hot wire apparatus. Perhaps the single drawback of a transient hot wire system is the rapid accumulation of large quantities of data. This report is the archival record of results on hydrogen, methane, ethane and propane with a minimum of text since analysis, explanation and discussion of the results are given in the references of sections 2, 3, 4, and 5.

The measurements were made with a transient hot wire thermal conductivity apparatus [1][1] which has been tested with nitrogen [1], helium [1] and argon [2,3]. The system has been used previously to measure the thermal conductivity surface of oxygen [4]. The temperature range of the instrument is 77 to 325 K and the pressure range is from near zero to 70 MPa.

The scheme used to measure the thermal conductivity surface of a given fluid is to conduct the measurements along isotherms. The spacing in temperature is chosen to be around 20 K resulting in a change of several percent in thermal conductivity between different isotherms. On each isotherm measurements are made at a number of different pressures. The spacing in pressure is arranged to give a spacing in density of about 1 mol/L. Finally, replicate measurements at the same cell temperature and pressure are made with three or four different power levels. The replicate measurements serve to verify the absence of convection, and, because the experimental temperatures vary with the applied power level, the measurements are actually independent of each other.

The sections for the individual fluids give the references where the results have been or will be published, the tables of data, the correlating equations in the form of computer programs which were used to adjust the thermal conductivity values to the nominal temperatures, and the equations of state used to infer densities from the measured pressures and temperatures. Recorded in the tables of data are the run and

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[1]Numbers in brackets indicate the literature references at the end of the paper.

the point numbers, the pressure, temperature and density of the fluid, the applied power, the experimental thermal conductivity, and its associated linear regression statistic STAT. For hydrogen the ortho-para composition is given as well. In the analysis of the thermal conductivity surface it is desirable to have the thermal conductivities at integral values of temperature. Therefore, each point has been adjusted at constant density to the nominal isotherm temperature by a slight shift in temperature using the correlating equations for the surface in question. Printed in the data tables are the adjusted thermal conductivities at the nominal isotherm temperature as well as the deviation between the adjusted values and the correlating surface.

2.   Hydrogen Results

A total of 1645 points were measured. Normal and near normal compositions are found in Table 1, para and para-rich compositions in Table 2. Preliminary normal results are reported in [5], a summary of the para results in [6], and the analysis of the thermal conductivity surface for both normal and para including the assignment of composition in [7]. The computer programs developed for the thermal conductivity of hydrogen are shown below. The equation of state used for hydrogen is given in [8].

```
      FUNCTION TCOPH2(DD,TIN,OP)
C     INPUT, DENSITY MOL/L, TEMPERATURE K, OP PARA FRACTION
C     OUTPUT, THERMAL CONDUCTIVITY OF HYDROGEN, W/M.K, 4 FEB 84
      DIMENSION TNZ(26),TPZ(26),TT(26),G(3)
      DATA(TNZ(I),I=1,26)/.0505,.0568,.0632,.0695,.0763,.0829,.0896,
     1 .0962,.1026,.1092,.1157,.1220,.1282,.1342,.1401,.1458,.1514,
     2 .1569,.1622,.1674,.1725,.1774,.1823,.1870,.1917,.1962/
      DATA(TPZ(I),I=1,26)/.0529,.0617,.0714,.0816,.0924,.1028,.1125,
     1 .1213,.1294,.1365,.1427,.1482,.1530,.1574,.1614,.1651,.1687,
     2 .1723,.1758,.1793,.1828,.1863,.1899,.1935,.1972,.2010/
      DATA(TT(I),I=1,26)/70.,80.,90.,100.,110.,120.,130.,140.,150.,
     1 160.,170.,180.,190.,200.,210.,220.,230.,240.,250.,260.,270.,
     2 280.,290.,300.,310.,320./
      DATA G/.1584312604E-02 , .3861103193E-04 , .1066433014E-06/
      DO 3 I=1,26
      IF(TIN.LT.TT(I)) GO TO 4
    3 CONTINUE
    4 CONTINUE
      TCZN=TNZ(I-1)+(TNZ(I)-TNZ(I-1))*(TIN-TT(I-1))/(TT(I)-TT(I-1))
      TCZP=TPZ(I-1)+(TPZ(I)-TPZ(I-1))*(TIN-TT(I-1))/(TT(I)-TT(I-1))
      OPDIFF=TCZP-TCZN
      TCZADJ=OPDIFF/0.75*(OP-0.25)
      FACTOR=1.0-0.028484+0.000070588*TIN
      TCZ=TCZN*FACTOR+TCZADJ+CRITH2(DD,TIN)
      TCOPH2=TCZ+G(1)*DD+(G(2)+G(3)*TIN)*(EXP(2.1*DD**0.36)-1.0)
      RETURN
      END


      FUNCTION CRITH2(RHO,TEMP)
C     ADAPTED FROM O2 FOR HIGH TEMPERATURE H2
C     VALID FROM 78 K UP, AMPL IS LINEAR
      DATA (TC=32.938),(RHOC=15.556)
      T=TEMP
      DEN=RHO
      IF(T.GT.77. .AND. T.LT.108.35658) GO TO 4
      CRITH2=0.
      RETURN
    4 CONTINUE
      AMPL=0.00635363-0.00005863*T
      DELT=T-TC
```

```
RHOCENT=RHOC-0.008229*DELT**1.5
DELRHO=DEN-RHOCENT
X1=.138*DELRHO
CRITH2=AMPL*EXP(-X1**2)
RETURN
END
```

Table 1. The Thermal Conductivity of Hydrogen, Normal and Near Normal Compositions

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 300.0 K W/m.K	deviation exp.-calc. percent
38062	67.316	297.768	18.9805	.2500	.55030	.24302	.005	.24419	-.68
38063	67.317	298.415	18.9512	.2500	.78981	.24253	.004	.24336	-.96
38064	67.317	299.194	18.9160	.2500	1.07232	.24341	.002	.24383	-.69
38065	67.318	300.090	18.8758	.2500	1.39816	.24437	.002	.24432	-.41
38066	67.318	300.631	18.8514	.2500	1.57690	.24440	.002	.24407	-.46
38067	64.867	297.711	18.5013	.2500	.54945	.24053	.005	.24173	-.72
38068	64.867	298.214	18.4787	.2500	.78817	.23852	.004	.23945	-1.63
38069	64.868	298.990	18.4442	.2500	1.07035	.24043	.002	.24096	-.92
38070	64.871	299.845	18.4066	.2500	1.39577	.24125	.002	.24133	-.69
38071	61.368	297.491	17.8033	.2500	.55041	.23614	.005	.23744	-1.12
38072	61.368	298.203	17.7720	.2500	.79029	.23650	.003	.23753	-1.01
38073	61.368	299.058	17.7346	.2500	1.07325	.23706	.002	.23755	-.93
38074	61.368	300.016	17.6928	.2500	1.39959	.23751	.002	.23750	-.87
38075	57.884	297.556	17.0723	.2500	.55050	.23312	.002	.23438	-.99
38076	57.886	298.134	17.0478	.2500	.79029	.23381	.003	.23477	-.77
38077	57.886	299.143	17.0047	.2500	1.07315	.23381	.002	.23425	-.91
38078	57.886	300.119	16.9632	.2500	1.39937	.23409	.002	.23403	-.93
38079	54.612	297.614	16.3631	.2500	.55052	.23012	.006	.23134	-.95
38080	54.612	298.347	16.3327	.2500	.79021	.23090	.003	.23175	-.71
38081	54.613	299.210	16.2969	.2500	1.07312	.23117	.001	.23158	-.72
38082	54.613	300.201	16.2559	.2500	1.39916	.23185	.002	.23175	-.57
38083	50.862	297.577	15.5263	.2500	.55084	.22693	.004	.22816	-.79
38084	50.862	298.253	15.4991	.2500	.79046	.22803	.003	.22892	-.41
38085	50.862	299.140	15.4634	.2500	1.07319	.22782	.003	.22826	-.63
38086	50.863	300.177	15.4220	.2500	1.39915	.22821	.003	.22812	-.62
38087	47.428	297.686	14.7260	.2500	.55080	.22382	.005	.22499	-.76
38088	47.427	298.435	14.6965	.2500	.79098	.22420	.003	.22499	-.71
38089	47.428	299.335	14.6618	.2500	1.07436	.22451	.002	.22485	-.71
38090	47.428	300.433	14.6193	.2500	1.40067	.22477	.002	.22455	-.77
38091	43.926	297.777	13.8814	.2500	.55041	.22035	.003	.22147	-.87
38092	43.926	298.473	13.8554	.2500	.79045	.22068	.003	.22145	-.84
38093	43.926	299.408	13.8205	.2500	1.07351	.22143	.002	.22173	-.65
38094	43.927	300.455	13.7818	.2500	1.39957	.22223	.002	.22200	-.46
38095	40.423	297.744	13.0096	.2500	.55011	.21760	.004	.21873	-.65
38096	40.423	298.510	12.9821	.2500	.78964	.21795	.002	.21870	-.62
38097	40.423	299.421	12.9497	.2500	1.07237	.21813	.002	.21842	-.70
38098	40.423	300.493	12.9118	.2500	1.39902	.21879	.002	.21854	-.58
38001	40.963	297.338	13.1609	.2500	.54935	.21762	.005	.21895	-.80
38002	40.961	299.537	13.0813	.2500	1.22817	.21906	.002	.21929	-.52
38003	40.961	300.024	13.0639	.2500	1.39645	.21921	.002	.21920	-.53
38004	40.956	298.980	13.1001	.2500	1.07091	.21882	.002	.21933	-.53
38005	40.956	298.075	13.1327	.2500	.78840	.21858	.003	.21954	-.48
38006	40.955	296.934	13.1736	.2500	.44605	.21761	.006	.21915	-.74
38007	37.588	297.362	12.2918	.2500	.54965	.21408	.005	.21540	-1.03
38008	37.588	298.200	12.2630	.2500	.78899	.21587	.003	.21677	-.34
38009	37.588	299.088	12.2326	.2500	1.07152	.21608	.002	.21653	-.40
38010	37.588	300.273	12.1924	.2500	1.39673	.21613	.002	.21599	-.59
38011	34.239	297.331	11.3990	.2500	.54955	.21170	.005	.21302	-.72
38012	34.239	298.263	11.3688	.2500	.78855	.21213	.003	.21299	-.69
38013	34.239	299.145	11.3403	.2500	1.07117	.21292	.002	.21334	-.48
38014	34.239	300.265	11.3044	.2500	1.39663	.21348	.002	.21335	-.42
38015	30.257	300.410	10.2008	.2500	1.39649	.20982	.002	.20962	-.52
38016	30.257	299.195	10.2367	.2500	1.07123	.20958	.002	.20998	-.40
38017	30.257	298.212	10.2659	.2500	.78866	.20897	.003	.20985	-.50
38018	30.256	297.402	10.2899	.2500	.54934	.20741	.005	.20869	-1.10
38019	27.168	297.074	9.4062	.2500	.44597	.20547	.006	.20691	-.66
38020	27.168	297.861	9.3843	.2500	.66358	.20581	.004	.20686	-.65
38021	27.168	298.753	9.3596	.2500	.92446	.20598	.002	.20659	-.75
38022	27.168	299.838	9.3297	.2500	1.22839	.20700	.002	.20708	-.47
38023	23.554	297.126	8.3184	.2500	.44591	.20143	.003	.20284	-1.12
38024	23.554	297.849	8.3003	.2500	.66296	.20199	.003	.20304	-.99
38025	23.554	298.734	8.2782	.2500	.92333	.20309	.002	.20371	-.63
38026	23.554	299.842	8.2508	.2500	1.22688	.20356	.002	.20364	-.63
38027	19.866	297.138	7.1623	.2500	.44540	.19910	.008	.20049	-.72
38028	19.866	297.992	7.1433	.2500	.66278	.19930	.002	.20028	-.80
38029	19.866	298.920	7.1230	.2500	.92347	.20008	.003	.20061	-.61
38030	19.866	300.086	7.0977	.2500	1.22702	.20042	.002	.20038	-.69
38031	16.373	297.221	6.0193	.2500	.44611	.19494	.006	.19629	-1.37
38032	16.373	298.019	6.0043	.2500	.66450	.19658	.003	.19754	-.71
38033	16.373	299.112	5.9838	.2500	.92562	.19754	.003	.19797	-.47
38034	16.372	300.315	5.9613	.2500	1.23002	.19772	.003	.19757	-.64

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38035	12.758	297.355	4.7862	.2500	.44657	.19324	.006	.19452	-.75
38036	12.758	298.273	4.7723	.2500	.66447	.19326	.004	.19410	-.95
38037	12.758	299.323	4.7564	.2500	.92559	.19410	.003	.19443	-.76
38038	12.758	300.545	4.7381	.2500	1.22979	.19515	.002	.19489	-.50
38039	9.260	297.425	3.5443	.2500	.44636	.18987	.006	.19111	-1.05
38040	9.260	298.322	3.5341	.2500	.66434	.19050	.004	.19131	-.93
38041	9.260	299.453	3.5212	.2500	.92532	.19185	.003	.19211	-.49
38042	9.260	300.748	3.5066	.2500	1.22949	.19218	.003	.19182	-.63
38043	5.727	297.505	2.2373	.2500	.44633	.18793	.006	.18913	-.61
38044	5.726	298.485	2.2299	.2500	.66416	.18838	.004	.18911	-.61
38045	5.726	299.640	2.2214	.2500	.92518	.18897	.003	.18914	-.58
38046	5.726	300.259	2.2169	.2500	1.07196	.18946	.003	.18934	-.47
38047	5.693	297.716	2.2229	.2500	.44666	.18926	.006	.19036	.06
38048	5.693	298.651	2.2161	.2500	.66476	.18965	.004	.19030	.04
38049	5.693	299.788	2.2078	.2500	.92586	.18971	.003	.18981	-.21
38050	5.693	300.348	2.2038	.2500	1.07272	.19022	.003	.19005	-.08
38051	2.258	297.521	.9003	.2500	.44603	.18491	.007	.18605	-.79
38052	2.258	298.059	.8990	.2500	.54952	.18500	.009	.18593	-.85
38053	2.258	298.540	.8976	.2500	.66375	.18539	.008	.18609	-.77
38054	2.258	299.116	.8958	.2500	.78887	.18565	.006	.18607	-.77
38055	2.258	299.740	.8937	.2500	.92466	.18631	.005	.18643	-.58

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 250.0 K W/m.K	deviation exp.-calc. percent
39001	68.197	248.921	21.6909	.2500	1.01362	.22923	.003	.22987	-1.09
39002	58.200	249.852	21.6364	.2500	1.30044	.23207	.002	.23216	.03
39003	68.206	250.275	21.6129	.2500	1.45637	.23115	.002	.23099	-.42
39004	54.709	250.364	20.8806	.2500	1.45645	.22716	.001	.22695	-.46
39005	64.712	249.414	20.9363	.2500	1.15140	.22849	.002	.22884	.24
39006	64.713	249.831	20.9122	.2500	1.29928	.22680	.001	.22690	-.55
39007	61.375	249.570	20.2074	.2500	1.15329	.22385	.002	.22410	-.16
39008	61.378	249.934	20.1872	.2500	1.30198	.22371	.002	.22375	-.28
39009	61.376	250.427	20.1589	.2500	1.45928	.22439	.002	.22414	-.03
39010	57.953	249.526	19.4446	.2500	1.15376	.22009	.002	.22037	-.12
39011	57.953	249.909	19.4231	.2500	1.30197	.22021	.002	.22026	-.12
39012	57.953	250.414	19.3951	.2500	1.45931	.21959	.002	.21935	-.48
39013	54.237	249.528	18.5801	.2500	1.15346	.21594	.002	.21621	-.13
39014	54.237	250.074	18.5502	.2500	1.30159	.21638	.002	.21634	-.00
39015	54.237	250.546	18.5245	.2500	1.45883	.21663	.001	.21632	.04
39016	50.961	250.669	17.7263	.2500	1.45964	.21313	.002	.21275	.08
39017	50.961	250.081	17.7576	.2500	1.30216	.21266	.002	.21261	-.05
39018	50.952	249.628	17.7820	.2500	1.15371	.21281	.002	.21302	.10
39019	47.348	249.234	16.8919	.2500	1.01461	.20814	.002	.20858	-.16
39020	47.349	249.732	16.8662	.2500	1.15368	.20908	.003	.20923	.20
39021	47.349	250.239	16.8400	.2500	1.30199	.20977	.002	.20964	.45
39022	42.152	249.398	15.5019	.2500	1.01439	.20374	.002	.20408	.44
39023	42.152	249.868	15.4788	.2500	1.15350	.20169	.002	.20176	-.66
39024	42.152	250.386	15.4533	.2500	1.30195	.20326	.002	.20305	.03
39025	40.164	249.472	14.9461	.2500	1.01442	.19934	.002	.19964	-.69
39026	40.164	249.954	14.9227	.2500	1.15359	.20080	.002	.20083	-.05
39027	40.164	250.471	14.8980	.2500	1.30186	.20111	.001	.20085	.01
39028	36.828	249.500	13.9859	.2500	1.01438	.19627	.002	.19655	-.43
39029	36.828	249.946	13.9654	.2500	1.15361	.19831	.002	.19834	.51
39030	36.828	250.546	13.9379	.2500	1.30174	.19677	.002	.19647	-.39
39031	33.386	249.614	12.9476	.2500	1.01438	.19506	.002	.19527	.80
39032	33.386	250.103	12.9264	.2500	1.15348	.19235	.002	.19229	-.69
39033	33.386	250.639	12.9031	.2500	1.30194	.19375	.002	.19340	-.08
39034	29.369	249.701	11.6779	.2500	1.01313	.18964	.002	.18981	.19
39035	29.369	250.187	11.6583	.2500	1.15231	.18981	.002	.18971	.17
39036	29.369	249.157	11.6998	.2500	.88308	.18988	.003	.19035	.43
39037	26.273	249.263	10.6714	.2500	.88483	.18565	.002	.18607	-.11
39038	26.271	249.794	10.6507	.2500	1.01561	.18550	.002	.18561	-.32
39039	26.270	250.357	10.6295	.2500	1.15512	.18706	.002	.18687	.39
39040	22.840	249.392	9.4798	.2500	.98537	.18227	.002	.18260	-.06
39041	22.840	249.951	9.4607	.2500	1.01564	.18256	.003	.18259	-.04
39042	22.840	250.526	9.4412	.2500	1.15503	.18265	.001	.18238	-.12
39043	19.322	249.667	8.1964	.2500	.88486	.17973	.002	.17991	.44
39044	19.322	250.136	8.1823	.2500	1.01501	.17996	.002	.17989	.45
39045	19.323	250.707	8.1655	.2500	1.15404	.18025	.002	.17987	.47
39046	17.251	249.217	7.4297	.2500	.76268	.17692	.003	.17735	.16
39047	17.251	249.723	7.4157	.2500	.88382	.17712	.002	.17727	.13
39048	17.251	250.233	7.4017	.2500	1.01412	.17750	.002	.17738	.21
39049	15.213	249.202	6.6399	.2500	.76355	.17461	.003	.17504	-.00
39050	15.213	249.692	6.6277	.2500	.88538	.17530	.003	.17547	.26
39051	15.213	250.276	6.6132	.2500	1.01593	.17554	.003	.17539	.24
39052	13.128	249.285	5.8069	.2500	.76382	.17276	.003	.17315	.09
39053	13.128	249.799	5.7956	.2500	.88525	.17281	.003	.17292	-.02
39054	13.128	250.344	5.7836	.2500	1.01583	.17315	.002	.17297	.02
39055	11.082	249.337	4.9673	.2500	.76365	.17034	.002	.17070	-.17
39056	11.092	249.839	4.9578	.2500	.88507	.17079	.002	.17088	-.06
39057	11.082	250.448	4.9462	.2500	1.01536	.17146	.002	.17122	.16
39058	9.044	249.427	4.1071	.2500	.76360	.16837	.003	.16868	-.21

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 200.0 K W/m.K	deviation exp.-calc. percent
39059	9.044	249.972	4.0984	.2500	.88511	.16958	.002	.16960	.35
39060	9.043	250.568	4.0887	.2500	1.01545	.16926	.003	.16896	-.02
39061	6.749	249.008	3.1166	.2500	.65145	.16586	.004	.16639	-.28
39062	6.747	249.535	3.1093	.2500	.76390	.16624	.002	.16649	-.21
39063	6.747	250.167	3.1016	.2500	.88518	.16713	.004	.16704	.13
39064	4.793	249.121	2.2413	.2500	.65132	.16475	.003	.16522	.13
39065	4.792	249.652	2.2363	.2500	.76381	.16518	.003	.16537	.22
39066	4.792	250.272	2.2308	.2500	.88538	.16476	.003	.16462	-.23
39067	2.833	249.330	1.3409	.2500	.65129	.16312	.004	.16348	.19
39068	2.833	249.943	1.3377	.2500	.76365	.16419	.004	.16422	.64
39069	2.832	249.584	1.3392	.2500	.70636	.16333	.004	.16355	.23
39070	1.278	249.363	.6111	.2500	.65055	.16284	.012	.16318	.89

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 200.0 K W/m.K	deviation exp.-calc. percent
40001	68.692	199.997	25.1397	.2500	1.02232	.22167	.001	.22168	.33
40002	68.689	200.284	25.1157	.2500	1.14618	.22142	.002	.22123	.20
40003	68.688	200.678	25.0844	.2500	1.27732	.22147	.001	.22101	.19
40004	64.982	199.822	24.3445	.2500	1.02239	.21514	.001	.21626	.10
40005	64.984	200.184	24.3156	.2500	1.14684	.21567	.001	.21555	-.16
40006	64.984	200.631	24.2816	.2500	1.27824	.21632	.001	.21590	.10
40007	61.616	199.949	23.5697	.2500	1.02309	.21085	.002	.21088	-.28
40008	61.617	200.360	23.5381	.2500	1.14706	.21149	.002	.21125	-.02
40009	61.617	200.771	23.5063	.2500	1.27824	.21222	.002	.21171	.28
40010	58.091	200.071	22.7245	.2500	1.02327	.20742	.002	.20737	.32
40011	58.091	200.446	22.6957	.2500	1.14740	.20762	.002	.20733	.38
40012	58.092	200.811	22.6681	.2500	1.27873	.20753	.002	.20700	.29
40013	54.613	200.117	21.8588	.2500	1.02287	.20246	.001	.20238	.18
40014	54.613	200.523	21.8280	.2500	1.14669	.20246	.001	.20212	.12
40015	54.614	200.891	21.8004	.2500	1.27856	.20296	.001	.20238	.32
40016	51.083	200.217	20.9342	.2500	1.02358	.19864	.001	.19850	.62
40017	51.085	200.646	20.9028	.2500	1.14747	.19875	.001	.19833	.62
40018	51.087	201.034	20.8746	.2500	1.27892	.19834	.001	.19767	.36
40019	47.666	200.290	19.9974	.2500	1.02318	.19386	.002	.19367	.52
40020	47.666	200.710	19.9670	.2500	1.14727	.19427	.001	.19381	.66
40021	47.668	201.069	19.9412	.2500	1.27872	.19480	.001	.19411	.88
40022	44.034	200.136	18.9673	.2500	1.02235	.18936	.001	.18927	.74
40023	44.036	200.558	18.9379	.2500	1.14635	.18933	.001	.18897	.65
40024	44.037	201.025	18.9051	.2500	1.27756	.18956	.001	.18891	.69
40025	40.646	199.784	17.9683	.2500	.90496	.18455	.002	.18469	.66
40026	40.647	200.181	17.9409	.2500	1.02178	.18456	.002	.18445	.59
40027	40.647	200.650	17.9086	.2500	1.14565	.18512	.001	.18471	.81
40029	37.112	200.291	16.8074	.2500	1.02147	.17984	.007	.17966	.57
40031	33.560	199.928	15.6336	.2500	.90463	.17450	.003	.17455	.30
40033	33.560	200.757	15.5808	.2500	1.14535	.17616	.003	.17569	1.06
40034	30.078	199.904	14.3914	.2500	.90530	.17072	.002	.17078	.78
40035	30.077	200.344	14.3564	.2500	1.02218	.17064	.002	.17043	.63
40036	30.076	200.895	14.3308	.2500	1.14629	.17145	.002	.17090	.97
40037	26.575	199.751	13.0738	.2500	.79580	.16571	.002	.16586	.58
40038	26.575	200.145	13.0511	.2500	.90524	.16607	.002	.16598	.69
40039	26.575	200.651	13.0224	.2500	1.02239	.16664	.002	.16624	.90
40040	22.879	199.858	11.5790	.2500	.79588	.16059	.002	.16068	.35
40041	22.879	200.288	11.5566	.2500	.90562	.16106	.001	.16088	.52
40042	22.879	200.740	11.5333	.2500	1.02265	.16201	.001	.16156	.98
40043	19.483	199.966	10.1205	.2500	.79602	.15699	.001	.15701	.79
40044	19.483	200.421	10.0993	.2500	.90567	.15691	.001	.15666	.61
40045	19.483	200.956	10.0746	.2500	1.02286	.15794	.002	.15736	1.10
40046	17.235	200.156	9.1031	.2500	.79726	.15421	.002	.15412	.78
40047	17.236	200.641	9.0829	.2500	.90748	.15451	.002	.15412	.82
40048	17.236	199.592	9.1275	.2500	.69464	.15378	.002	.15403	.68
40049	15.172	199.644	8.1624	.2500	.69481	.15113	.002	.15135	.63
40050	15.172	200.109	8.1445	.2500	.79769	.15145	.002	.15138	.69
40051	15.172	200.587	8.1261	.2500	.90781	.15196	.002	.15161	.87
40052	13.207	199.661	7.2134	.2500	.69490	.14845	.002	.14866	.47
40053	13.207	200.243	7.1933	.2500	.79756	.14911	.002	.14896	.71
40054	13.208	200.781	7.1751	.2500	.90762	.14944	.002	.14897	.75
40055	11.114	199.898	6.1609	.2500	.69505	.14641	.002	.14647	.74
40056	11.114	200.370	6.1468	.2500	.79784	.14675	.002	.14653	.81
40057	11.114	199.387	6.1762	.2500	.59924	.14620	.002	.14657	.79
40058	9.000	199.540	5.0789	.2500	.59924	.14321	.003	.14349	.44
40059	9.000	199.950	5.0683	.2500	.69505	.14399	.002	.14402	.82
40060	9.000	200.528	5.0540	.2500	.79790	.14399	.002	.14368	.61
40061	6.801	199.593	3.9004	.2500	.59941	.14044	.002	.14069	.32
40062	6.801	200.109	3.8904	.2500	.69510	.14109	.002	.14103	.57
40063	6.800	200.734	3.8781	.2500	.79816	.14153	.002	.14109	.64
40064	4.840	199.729	2.8144	.2500	.59967	.13810	.002	.13826	.24
40065	4.840	200.328	2.8061	.2500	.69528	.13884	.002	.13865	.53
40066	4.840	200.943	2.7976	.2500	.79832	.13907	.002	.13851	.44
40067	2.771	199.535	1.6372	.2500	.51119	.13563	.003	.13591	.27
40068	2.771	200.034	1.6331	.2500	.59970	.13605	.003	.13603	.36
40069	2.770	200.606	1.6281	.2500	.69563	.13691	.002	.13655	.75

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 175.0 K W/m.K	deviation exp.-calc. percent
41001	68.280	173.727	27.3095	.2500	.87423	.21719	.002	.21813	.34
41002	68.271	174.002	27.2817	.2500	.98033	.21704	.002	.21777	.27
41003	68.267	174.232	27.2594	.2501	1.09242	.21722	.002	.21778	.34
41004	68.262	174.685	27.2162	.2501	1.21069	.21612	.001	.21635	-.18
41005	64.900	174.085	26.5262	.2502	.97983	.21166	.001	.21233	.07
41006	64.903	174.388	26.4986	.2502	1.09201	.21216	.002	.21260	.29
41007	64.904	174.807	26.4599	.2503	1.21049	.21206	.001	.21220	.22
41008	61.485	174.165	25.7274	.2506	.97969	.20616	.002	.20676	-.15
41009	61.486	174.402	25.7056	.2506	1.09201	.20702	.002	.20745	.25
41010	61.485	174.775	25.6710	.2506	1.21007	.20656	.002	.20672	-.00
41011	57.521	174.194	24.7598	.2509	.97971	.19986	.002	.20043	-.37
41012	57.521	174.499	24.7316	.2509	1.09196	.20087	.001	.20123	.11
41013	57.521	174.964	24.6891	.2509	1.20985	.20101	.001	.20104	.14
41014	54.101	174.296	23.8738	.2510	.97961	.19579	.002	.19629	.13
41015	54.103	174.682	23.8394	.2510	1.09202	.19695	.002	.19717	.68
41016	54.106	175.083	23.8037	.2511	1.20996	.19576	.001	.19570	.03
41017	50.803	174.317	22.9842	.2512	.97969	.19134	.002	.19182	.37
41018	50.805	174.782	22.9428	.2512	1.09209	.19145	.002	.19160	.38
41019	50.808	175.128	22.9123	.2512	1.20989	.19173	.001	.19164	.49
41020	47.167	174.035	21.9770	.2514	.87467	.18548	.001	.18615	.20
41021	47.169	174.382	21.9465	.2514	.98122	.18563	.001	.18606	.23
41022	47.172	174.812	21.9092	.2514	1.09421	.18656	.001	.18669	.67
41023	43.851	174.201	20.9667	.2516	.87509	.18065	.002	.18120	.26
41024	43.854	174.485	20.9426	.2516	.98101	.18118	.002	.18153	.51
41025	43.855	174.872	20.9093	.2516	1.09368	.18115	.002	.18124	.44
41026	40.172	174.298	19.7875	.2517	.87624	.17525	.001	.17573	.33
41027	40.174	174.646	19.7582	.2518	.98326	.17544	.001	.17568	.38
41028	40.174	175.096	19.7197	.2518	1.09618	.17586	.001	.17579	.54
41029	36.927	174.375	18.6843	.2519	.87655	.17083	.002	.17125	.59
41030	36.929	174.787	18.6504	.2519	.98334	.17116	.002	.17130	.71
41031	36.930	175.267	18.6109	.2520	1.09673	.17132	.001	.17114	.71
41032	32.668	174.133	17.1625	.2576	.77613	.16602	.002	.16660	1.50
41033	32.669	174.570	17.1278	.2576	.87653	.16613	.002	.16642	1.48
41034	32.669	174.955	17.0971	.2576	.98305	.16624	.002	.16627	1.47
41035	29.963	174.243	16.1085	.2578	.77579	.16072	.002	.16122	.76
41036	29.963	174.559	16.0841	.2578	.87603	.16060	.002	.16089	.62
41037	29.964	175.032	16.0480	.2578	.98297	.16112	.001	.16110	.83
41038	26.454	174.253	14.6676	.2579	.77575	.15547	.002	.15596	.79
41039	26.455	174.697	14.6356	.2579	.87619	.15602	.002	.15622	1.03
41040	26.455	175.130	14.6044	.2580	.98281	.15623	.002	.15615	1.05
41041	22.841	174.348	13.0698	.2581	.77620	.15013	.002	.15055	.82
41042	22.842	174.824	13.0385	.2581	.87671	.15032	.002	.15043	.81
41043	22.842	173.882	13.1019	.2582	.68174	.14976	.002	.15049	.71
41044	19.491	174.194	11.4975	.2583	.68225	.14486	.002	.14538	.67
41045	19.491	174.609	11.4726	.2583	.77658	.14531	.002	.14556	.85
41046	19.491	175.071	11.4446	.2583	.87708	.14560	.002	.14555	.90
41047	17.250	174.282	10.3730	.2585	.68311	.14134	.002	.14180	.49
41048	17.250	174.741	10.3473	.2585	.77766	.14190	.002	.14207	.72
41049	17.250	175.169	10.3235	.2585	.87878	.14211	.002	.14200	.73
41050	15.124	174.340	9.2612	.2586	.68355	.13862	.001	.13904	.73
41051	15.124	174.734	9.2412	.2586	.77798	.13837	.002	.13854	.41
41052	15.125	175.289	9.2134	.2587	.87905	.13934	.002	.13916	.90
41053	13.057	174.471	8.1318	.2589	.68424	.13550	.002	.13584	.57
41054	13.057	174.990	8.1083	.2589	.77891	.13573	.002	.13574	.54
41055	13.057	175.531.	8.0841	.2590	.87995	.13593	.002	.13559	.48
41056	11.071	174.641	7.0040	.2591	.68466	.13294	.002	.13317	.70
41057	11.071	175.073	6.9870	.2591	.77931	.13337	.002	.13332	.84
41058	11.071	174.112	7.0249	.2591	.59593	.13273	.003	.13329	.75
41059	9.033	174.295	5.8226	.2593	.59609	.12962	.002	.13007	.49
41060	9.033	174.732	5.8082	.2593	.68459	.13012	.002	.13029	.68
41061	9.033	175.250	5.7911	.2593	.77948	.13048	.002	.13032	.74
41062	6.920	174.443	4.5327	.2594	.59629	.12708	.002	.12743	.71
41063	6.920	174.970	4.5188	.2595	.68480	.12694	.002	.12696	.36
41064	6.920	175.500	4.5052	.2595	.77970	.12755	.002	.12723	.60
41065	4.882	173.985	3.2570	.2596	.51413	.12382	.003	.12446	.53
41066	4.882	174.558	3.2458	.2596	.59652	.12420	.002	.12448	.56
41067	4.882	175.129	3.2352	.2596	.68526	.12467	.002	.12459	.67
41068	2.741	174.413	1.8533	.2598	.51455	.12061	.002	.12098	.03
41069	2.740	174.834	1.8486	.2598	.59699	.12147	.002	.12157	.52
41070	2.739	175.487	1.8410	.2598	.68532	.12162	.002	.12131	.32
41071	1.399	174.073	.9572	.2599	.43832	.11843	.007	.11901	-.16
41072	1.399	174.548	.9542	.2600	.51447	.11870	.004	.11898	-.18
41073	1.398	175.156	.9504	.2600	.59707	.11947	.004	.11937	.16

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 150.0 K W/m.K	deviation exp.-calc. percent
42001	69.746	147.874	30.2675	.2500	.81224	.21817	.002	.21982	.16
42002	69.744	148.179	30.2331	.2501	.90545	.21814	.002	.21955	.15
42003	69.744	148.277	30.2223	.2502	1.00369	.21846	.001	.21979	.30
42004	64.986	147.912	29.2164	.2506	.81198	.21032	.002	.21191	.10
42005	64.988	148.394	29.1631	.2507	.90561	.21067	.001	.21189	.28
42006	64.990	148.461	29.1560	.2507	1.00371	.21047	.001	.21164	.18
42007	61.347	147.978	28.3618	.2511	.81240	.20484	.002	.20636	.34
42008	61.347	148.216	28.3352	.2512	.90561	.20479	.002	.20613	.31
42009	61.346	148.617	28.2904	.2512	1.00414	.20516	.002	.20620	.49
42012	57.952	148.657	27.4548	.2522	1.00571	.19946	.002	.20046	.44
42016	50.845	148.244	25.6136	.2533	.81363	.18741	.002	.18869	.35
42017	50.848	148.473	25.5891	.2533	.90710	.18781	.003	.18892	.55
42018	50.851	148.917	25.5407	.2534	1.00615	.18604	.002	.18683	-.41
42019	47.463	148.370	24.6207	.2538	.81368	.18168	.002	.18285	.34
42020	47.466	148.628	24.5933	.2538	.90713	.18024	.002	.18123	-.46
42021	47.469	148.930	24.5607	.2539	1.00598	.18277	.002	.18354	.90
42022	43.992	148.424	23.5471	.2543	.81462	.17637	.002	.17749	.68
42023	43.995	148.759	23.5115	.2544	.90871	.17447	.003	.17535	-.42
42024	43.997	149.173	23.4667	.2545	1.00809	.17676	.001	.17735	.84
42025	40.499	148.614	22.3797	.2549	.81538	.17035	.002	.17132	.67
42026	40.502	148.903	22.3492	.2549	.90906	.16993	.001	.17070	.39
42027	40.505	149.222	22.3158	.2550	1.00840	.16981	.001	.17036	.29
42028	36.919	148.585	21.1223	.2555	.81534	.16403	.001	.16501	.61
42029	36.922	148.962	21.0831	.2555	.90931	.16407	.001	.16479	.58
42030	36.925	149.372	21.0405	.2556	1.00892	.16389	.001	.16433	.42
42031	33.442	148.807	19.7814	.2560	.81571	.15788	.001	.15870	.53
42032	33.445	149.219	19.7396	.2561	.90994	.15802	.001	.15856	.56
42033	33.447	149.476	19.7137	.2562	1.00891	.15714	.004	.15750	-.04
42037	29.856	149.029	18.2912	.2746	.81697	.15317	.002	.15383	1.10
42038	29.857	148.672	18.3276	.2746	.72797	.15181	.002	.15272	.28
42039	29.858	149.394	18.2551	.2747	.91095	.15374	.002	.15415	1.40
42040	26.414	148.766	16.7905	.2752	.72754	.14673	.002	.14756	.92
42041	26.414	149.099	16.7586	.2753	.81630	.14613	.002	.14674	.45
42042	26.415	149.498	16.7206	.2753	.91059	.14592	.002	.14626	.22
42043	22.870	148.853	15.0746	.2758	.72882	.13961	.002	.14038	.31
42044	22.871	149.261	15.0384	.2758	.81817	.14059	.002	.14108	.90
42045	22.872	149.692	14.9999	.2759	.91300	.14018	.002	.14039	.50
42046	19.390	149.067	13.2308	.2763	.72952	.13417	.002	.13479	.75
42047	19.391	149.542	13.1924	.2763	.81891	.13404	.002	.13434	.51
42048	19.392	148.644	13.2670	.2764	.64532	.13430	.001	.13520	.96
42049	17.298	148.802	12.0776	.2769	.64558	.13039	.002	.13118	.74
42050	17.298	149.190	12.0479	.2769	.72948	.12975	.002	.13028	.12
42051	17.299	149.615	12.0154	.2770	.81888	.13129	.002	.13154	1.15
42052	15.145	148.865	10.8000	.2774	.64560	.12743	.002	.12818	1.33
42053	15.145	149.333	10.7670	.2775	.72972	.12743	.003	.12787	1.16
42054	15.145	149.666	10.7439	.2775	.81893	.12577	.003	.12599	-.26
42055	13.127	149.082	9.5332	.2780	.64598	.12303	.002	.12363	.52
42056	13.128	149.589	9.5016	.2780	.73006	.12300	.002	.12327	.29
42057	13.129	149.752	9.4915	.2781	.81894	.12314	.005	.12330	.34
42058	11.131	148.811	8.2510	.2792	.56792	.11940	.002	.12017	.40
42059	11.131	149.184	8.2302	.2793	.64687	.12043	.002	.12096	1.09
42060	11.131	149.609	8.2067	.2794	.73122	.12026	.002	.12051	.77
42061	9.048	148.907	6.8295	.2798	.56830	.11593	.003	.11664	.37
42062	9.049	149.358	6.8087	.2799	.64732	.11634	.002	.11676	.51
42063	9.049	149.754	6.7905	.2799	.73159	.11840	.010	.11856	2.05
42064	6.836	148.622	5.2673	.2803	.49489	.11272	.003	.11361	.87
42066	6.836	149.633	5.2307	.2804	.64795	.11276	.003	.11300	.40
42067	4.815	148.736	3.7663	.2809	.49519	.10847	.002	.10929	-.10
42068	4.814	149.215	3.7537	.2809	.56918	.10899	.002	.10950	.12
42069	4.814	149.702	3.7410	.2810	.64836	.10930	.005	.10949	.14
42070	2.794	148.610	2.2198	.2814	.42708	.10570	.003	.10660	.33
42071	2.793	149.078	2.2121	.2814	.49574	.10555	.002	.10614	-.08
42072	2.793	149.641	2.2034	.2815	.56993	.10583	.002	.10606	-.15

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 125.0 K W/m.K	deviation exp.-calc. percent
43001	67.854	124.136	32.7359	.2501	.89157	.21885	.001	.21957	.23
43002	67.850	124.499	32.6876	.2502	.97971	.21829	.001	.21871	.02
43003	67.845	124.771	32.6509	.2504	1.07174	.21821	.001	.21840	.02
43004	61.906	124.286	31.3874	.2514	.89144	.20791	.002	.20849	.10
43005	61.909	124.453	31.3660	.2516	.97894	.20765	.001	.20810	-.01
43006	61.911	124.884	31.3093	.2517	1.07147	.20846	.001	.20855	.42
43007	56.209	124.326	29.9935	.2529	.89167	.19718	.002	.19772	-.09
43008	56.214	124.668	29.9488	.2531	.97980	.19773	.001	.19800	.21
43009	56.219	124.117	30.0242	.2532	.80756	.19701	.001	.19772	-.21
43010	51.045	124.491	28.5946	.2544	.89323	.18792	.001	.18832	.07

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 100.0 K W/m.K	deviation exp.-calc. percent
43011	51.046	124.772	28.5568	.2546	.98144	.18774	.001	.18792	-.01
43012	51.048	124.058	28.6540	.2548	.80869	.18779	.002	.18853	-.03
43013	46.412	124.292	27.2721	.2565	.81084	.17856	.002	.17911	-.29
43014	46.414	124.659	27.2224	.2567	.89538	.18042	.002	.18068	.76
43015	46.415	124.975	27.1798	.2569	.98378	.18002	.002	.18004	.55
43016	42.165	124.419	25.9038	.2582	.81130	.17013	.001	.17057	-.45
43017	42.168	124.802	25.8525	.2583	.89590	.17072	.001	.17087	-.10
43018	42.171	125.090	25.8141	.2584	.98421	.17118	.001	.17111	.17
43019	38.304	124.660	24.5313	.2595	.81186	.16451	.001	.16476	.71
43020	38.309	124.875	24.5035	.2596	.89589	.16417	.001	.16426	.50
43021	38.312	125.300	24.4464	.2597	.98476	.16386	.001	.16364	.31
43022	38.314	124.340	24.5788	.2598	.73091	.16342	.001	.16391	.03
43023	34.523	124.448	23.1259	.2609	.73147	.15597	.001	.15638	.12
43024	34.527	124.696	23.0936	.2609	.81181	.15686	.001	.15708	.67
43025	34.529	125.060	23.0451	.2610	.89658	.15650	.001	.15646	.43
43026	31.151	124.262	21.7525	.2620	.65626	.14864	.002	.14918	-.19
43027	31.155	124.534	21.7170	.2621	.73217	.14939	.001	.14973	.29
43028	31.157	124.855	21.6747	.2622	.81271	.15011	.002	.15022	.75
43029	28.273	124.374	20.4390	.2632	.65666	.14344	.002	.14389	.31
43030	28.275	124.719	20.3943	.2633	.73280	.14429	.002	.14449	.86
43031	28.277	125.103	20.3446	.2634	.81371	.14431	.001	.14424	.84
43032	25.334	124.602	18.9707	.2957	.65879	.13813	.002	.13842	.25
43033	25.334	124.918	18.9298	.2958	.73463	.13867	.002	.13873	.60
43034	25.334	125.346	18.8746	.2959	.81547	.13886	.001	.13861	.67
43035	22.924	124.735	17.6784	.2970	.65829	.13355	.002	.13374	.61
43036	22.925	125.115	17.6313	.2971	.73483	.13365	.002	.13357	.61
43037	22.926	125.521	17.5812	.2971	.81587	.13272	.002	.13234	-.16
43038	20.560	124.469	16.3663	.2983	.58631	.12836	.002	.12874	.55
43039	20.561	124.816	16.3250	.2983	.65840	.12734	.002	.12747	-.33
43040	20.563	125.203	16.2793	.2984	.73489	.12658	.002	.12643	-1.02
43041	18.328	124.635	14.9826	.2995	.58678	.12289	.002	.12315	-.05
43042	18.329	124.944	14.9476	.2996	.65884	.12285	.002	.12289	-.17
43043	18.330	125.301	14.9080	.2997	.73527	.12347	.002	.12326	.24
43044	16.199	124.351	13.6211	.3007	.51924	.11783	.002	.11829	-.40
43045	16.200	124.741	13.5798	.3008	.58714	.11887	.002	.11905	.35
43046	16.201	125.141	13.5378	.3008	.65947	.11922	.002	.11912	.52
43047	14.175	124.516	12.1915	.3021	.51964	.11402	.002	.11436	-.04
43048	14.175	124.865	12.1576	.3022	.58758	.11462	.002	.11471	.35
43049	14.176	125.305	12.1145	.3023	.66008	.11483	.002	.11462	.37
43050	12.412	124.228	10.9157	.3035	.45635	.10961	.003	.11015	-.56
43051	12.412	124.610	10.8815	.3036	.52006	.11094	.002	.11121	.49
43052	12.412	124.988	10.8479	.3037	.58809	.10996	.002	.10997	-.56
43053	10.741	124.418	9.6014	.3048	.45687	.10713	.003	.10754	.29
43054	10.741	124.851	9.5666	.3048	.52072	.10756	.002	.10766	.49
43056	8.986	124.479	8.1693	.3059	.45710	.10349	.002	.10385	.25
43057	8.986	124.970	8.1357	.3060	.52117	.10346	.001	.10348	-.03
43058	8.987	125.448	8.1033	.3060	.58959	.10324	.002	.10293	-.49
43059	7.335	124.702	6.7556	.3070	.45770	.09979	.002	.10000	-.22
43060	7.338	125.055	6.7384	.3071	.52137	.10025	.001	.10021	.03
43061	7.338	125.553	6.7101	.3072	.59007	.10087	.001	.10049	.37
43062	5.871	125.067	5.4557	.3081	.45909	.09703	.002	.09698	-.31
43063	5.871	125.384	5.4407	.3082	.52312	.09743	.002	.09716	-.10
43064	5.871	124.408	5.4860	.3083	.39878	.09676	.002	.09717	-.20
43065	4.292	124.624	4.0492	.3093	.39931	.09358	.002	.09384	-.48
43066	4.292	125.070	4.0336	.3094	.45933	.09413	.002	.09408	-.18
43067	4.292	125.562	4.0170	.3094	.52366	.09474	.001	.09435	.14
43068	2.905	124.360	2.7701	.3103	.34402	.09071	.003	.09115	-.59
43069	2.904	124.821	2.7587	.3104	.39984	.09136	.002	.09148	-.20
43070	2.904	125.357	2.7461	.3105	.46000	.09170	.002	.09145	-.21
43071	1.456	124.689	1.3950	.3114	.34477	.08800	.002	.08821	-.91
43072	1.455	125.190	1.3886	.3115	.40070	.08828	.002	.08815	-.98
43073	1.455	125.771	1.3817	.3116	.46115	.08870	.002	.08817	-.94
44001	68.096	98.621	36.4360	.2502	.79090	.22907	.001	.23024	-.11
44002	68.094	98.718	36.4207	.2504	.86164	.22831	.001	.22940	-.42
44003	68.093	98.905	36.3915	.2507	.93621	.22836	.001	.22929	-.35
44004	61.010	98.776	34.9060	.2524	.79212	.21527	.001	.21628	-.10
44005	61.017	98.854	34.8949	.2526	.86271	.21448	.001	.21542	-.46
44006	61.021	99.101	34.8568	.2529	.93800	.21485	.001	.21559	-.22
44007	54.798	98.703	33.4539	.2544	.79173	.20222	.001	.20326	-.44
44008	54.808	99.081	33.3943	.2547	.86444	.20255	.001	.20329	-.18
44009	54.815	99.248	33.3689	.2550	.93905	.20251	.001	.20311	-.17
44010	48.884	98.643	31.9132	.2567	.72390	.18952	.001	.19058	-.73
44011	48.890	98.831	31.8830	.2569	.79283	.19006	.001	.19098	-.40
44012	48.895	99.175	31.8264	.2571	.86546	.18976	.001	.19041	-.48
44013	43.759	98.837	30.3791	.2600	.72516	.17881	.002	.17970	-.59
44014	43.763	99.183	30.3206	.2603	.79538	.17952	.001	.18015	-.11
44015	43.765	99.281	30.3046	.2605	.86642	.17826	.001	.17881	-.80
44016	39.158	98.785	28.8840	.2621	.66062	.16804	.002	.16895	-.98
44017	39.162	99.006	28.8464	.2623	.72625	.16890	.001	.16965	-.42

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 78.0 K W/m.K	deviation exp.-calc. percent
44018	39.165	99.290	28.7973	.2625	.79605	.16869	.001	.16922	-.49
44019	35.033	98.870	27.3622	.2641	.66213	.15962	.001	.16045	-.35
44020	35.036	99.114	27.3193	.2643	.72840	.15932	.001	.15997	-.49
44021	35.039	99.542	27.2435	.2646	.79939	.15978	.001	.16012	-.12
44022	31.342	99.101	25.8130	.2665	.66333	.15113	.001	.15178	-.14
44023	31.344	99.339	25.7706	.2667	.72957	.15073	.001	.15121	-.37
44024	31.346	99.737	25.6987	.2669	.80017	.15148	.001	.15167	.20
44025	28.088	99.236	24.3058	.2687	.66426	.14270	.001	.14324	-.44
44026	28.091	99.522	24.2545	.2689	.73082	.14262	.001	.14296	-.45
44027	28.094	99.808	24.2034	.2691	.80095	.14264	.001	.14278	-.39
44028	24.915	99.126	22.7098	.2705	.60178	.13453	.001	.13514	-.57
44029	24.917	99.333	22.6728	.2707	.66495	.13551	.002	.13597	.18
44030	24.919	99.743	22.5982	.2709	.73228	.13548	.001	.13566	.21
44031	22.369	99.320	21.2305	.2723	.60287	.12883	.001	.12929	.16
44032	22.370	99.606	21.1787	.2725	.66641	.12847	.001	.12874	-.10
44033	22.371	99.885	21.1285	.2727	.73307	.12884	.002	.12892	.21
44034	19.941	99.521	19.6723	.3167	.60468	.12298	.001	.12331	.14
44035	19.941	100.065	19.5745	.3169	.66978	.12327	.001	.12322	.39
44036	19.942	99.152	19.7395	.3172	.54390	.12212	.002	.12270	-.59
44037	17.807	99.310	18.2366	.3183	.54444	.11702	.001	.11748	.00
44038	17.807	99.620	18.1823	.3185	.60488	.11683	.002	.11708	-.16
44039	17.808	100.051	18.1074	.3187	.66945	.11784	.002	.11780	.69
44043	13.722	99.281	15.0037	.3221	.48895	.10509	.002	.10555	-.58
44044	13.722	99.583	14.9557	.3223	.54650	.10577	.002	.10604	.03
44045	13.722	99.889	14.9072	.3226	.60714	.10588	.002	.10595	.09
44046	12.338	99.026	13.8070	.3240	.43541	.10130	.001	.10191	-.48
44047	12.338	99.403	13.7499	.3242	.48950	.10156	.002	.10193	-.29
44048	12.338	99.797	13.6910	.3244	.54727	.10160	.002	.10173	-.32
44049	10.558	99.186	12.0813	.3257	.43610	.09608	.002	.09658	-.74
44050	10.558	99.533	12.0342	.3259	.49014	.09675	.002	.09704	-.13
44051	10.558	99.980	11.9741	.3260	.54829	.09724	.002	.09725	.26
44053	9.258	99.327	10.7436	.3282	.43692	.09297	.002	.09339	-.23
44054	9.258	99.744	10.6927	.3284	.49129	.09324	.002	.09340	-.07
44055	7.582	99.265	8.9573	.3296	.38685	.08817	.002	.08863	-.32
44056	7.582	99.720	8.9109	.3298	.43840	.08834	.002	.08851	-.32
44057	7.582	100.090	8.8732	.3301	.49289	.08864	.002	.08858	-.14
44058	6.374	99.118	7.6189	.3313	.33958	.08469	.002	.08525	-.42
44059	6.374	99.445	7.5905	.3314	.38735	.08499	.002	.08534	-.23
44060	6.374	99.754	7.5636	.3316	.43842	.08526	.002	.08542	-.07
44061	5.019	99.173	6.0474	.3328	.33983	.08085	.001	.08138	-.65
44062	5.019	99.671	6.0131	.3330	.38819	.08131	.001	.08152	-.39
44063	5.019	100.034	5.9884	.3332	.43950	.08156	.001	.08154	-.30
44064	3.782	98.967	4.5909	.3344	.29593	.07733	.003	.07800	-.88
44065	3.782	99.496	4.5637	.3345	.34119	.07780	.002	.07813	-.64
44066	3.782	99.835	4.5465	.3347	.38924	.07805	.002	.07816	-.56
44067	2.525	99.318	3.0616	.3359	.29702	.07459	.002	.07504	-.60
44068	2.524	99.786	3.0456	.3361	.34213	.07470	.002	.07484	-.82
44069	2.524	100.139	3.0340	.3363	.39040	.07493	.002	.07483	-.81
44070	1.160	99.649	1.4025	.3377	.29796	.07098	.002	.07121	-1.40
44071	1.160	99.141	1.4095	.3377	.25585	.07043	.002	.07100	-1.73
44072	1.159	100.092	1.3947	.3380	.34325	.07145	.002	.07138	-1.14

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 78.0 K W/m.K	deviation exp.-calc. percent
45001	67.360	77.293	39.7938	.2502	.65559	.24717	.002	.24781	1.11
45002	67.359	77.431	39.7700	.2505	.71036	.24705	.002	.24757	1.11
45003	67.359	77.443	39.7679	.2508	.76588	.24612	.002	.24663	.75
45004	59.513	77.093	38.2826	.2514	.65405	.22929	.002	.23009	.29
45005	59.515	77.214	38.2614	.2520	.70822	.22812	.001	.22881	-.18
45006	59.517	77.483	38.2129	.2525	.76641	.22826	.001	.22871	-.01
45007	52.263	77.436	36.6092	.2543	.65768	.21474	.001	.21522	.86
45008	52.273	77.477	36.6036	.2546	.71128	.21353	.001	.21397	.30
45009	52.279	77.712	36.5604	.2549	.76945	.21343	.001	.21367	.35
45010	46.117	77.503	35.0514	.2571	.65804	.19966	.001	.20007	.25
45011	46.125	77.616	35.0311	.2574	.71289	.19896	.001	.19928	-.06
45012	46.134	77.802	34.9963	.2576	.77051	.19891	.001	.19907	-.01
45013	40.443	77.497	33.4339	.2596	.65817	.18500	.001	.18540	-.47
45014	40.449	77.846	33.3629	.2598	.71516	.18463	.001	.18475	-.52
45015	40.456	77.973	33.3383	.2601	.77253	.18455	.001	.18457	-.51
45016	35.433	77.707	31.7536	.2642	.66138	.17242	.001	.17265	-.52
45017	35.437	77.914	31.7093	.2646	.71770	.17440	.001	.17447	.71
45018	35.440	78.068	31.6765	.2649	.77546	.17209	.001	.17204	-.55
45019	30.515	77.834	29.8626	.2668	.66270	.15902	.001	.15915	-.8C
45020	30.522	78.114	29.8007	.2634	.71909	.15927	.001	.15918	-.50
45021	30.529	77.609	29.9205	.2638	.60922	.15874	.002	.15904	-1.10
45022	27.438	77.836	28.5242	.2698	.61252	.15084	.001	.15096	-.58
45023	27.443	78.279	28.4207	.2701	.66917	.15225	.001	.15204	.55
45024	27.446	78.243	28.4307	.2704	.72336	.15042	.001	.15024	-.68
45025	23.780	77.777	26.7173	.2726	.56042	.13996	.002	.14012	-.73
45026	23.785	78.067	26.6471	.2729	.61289	.14031	.002	.14026	-.35
45027	23.788	78.288	26.5937	.2732	.66761	.14033	.002	.14012	-.24
45028	20.996	77.722	25.1239	.2751	.51255	.13125	.002	.13145	-.81

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 225.0 K W/m.K	deviation exp.-calc. percent
45029	21.000	77.947	25.0679	.2754	.56194	.13170	.C02	.13174	-.37
45030	21.003	78.179	25.0099	.2757	.61389	.13171	.002	.13158	-.26
45031	18.653	77.819	23.5500	.2775	.51328	.12328	.002	.12340	-1.03
45032	18.656	78.033	23.4962	.2778	.56256	.12371	.002	.12369	-.59
45033	18.659	78.365	23.4107	.2781	.61561	.12363	.002	.12338	-.51
45034	16.632	77.619	22.0876	.2829	.46700	.11620	.0C2	.11646	-1.32
45035	16.633	77.976	21.9925	.2956	.51539	.11731	.002	.11733	-.28
45036	16.634	78.280	21.9118	.2834	.56560	.11720	.002	.11701	-.19
45037	14.589	77.825	20.2865	.2856	.46853	.10950	.002	.10961	-.80
45038	14.591	78.123	20.2088	.2859	.51652	.10993	.002	.10985	-.30
45039	14.593	78.472	20.1174	.2861	.56716	.11041	.002	.11011	.25
45040	12.981	77.733	18.7561	.2880	.42458	.10444	.002	.10461	-.08
45041	12.983	77.961	18.6978	.2883	.46974	.10420	.002	.10422	-.24
45042	12.986	78.380	18.5901	.2887	.51856	.10462	.002	.10438	.28
45043	12.775	78.053	18.4589	.3324	.42639	.10462	.002	.10459	.68
45044	12.774	78.263	18.4031	.3326	.47150	.10457	.002	.10440	.69
45045	12.774	78.482	18.3457	.3328	.51890	.10483	.003	.10452	1.00
45046	11.967	77.733	17.6811	.3341	.38285	.10143	.003	.10160	.44
45047	11.967	78.078	17.5912	.3343	.42630	.10107	.002	.10102	.18
45048	11.967	78.263	17.5436	.3346	.47116	.10092	.002	.10075	.07
45049	10.990	77.846	15.5410	.3363	.38351	.09679	.002	.09689	-.46
45050	10.991	78.020	16.4979	.3366	.42623	.09720	.003	.09719	-.00
45051	10.992	78.354	16.4154	.3368	.47220	.09781	.003	.09759	.68
45052	10.220	77.788	15.6240	.3381	.38337	.09385	.002	.09398	-.44
45053	10.220	78.085	15.5522	.3383	.42677	.09403	.002	.09398	-.20
45054	10.221	78.611	15.4264	.3385	.47385	.09445	.003	.09407	.33
45055	9.340	77.944	14.4635	.3399	.38421	.09048	.003	.09051	-.31
45056	9.341	78.303	14.3819	.3401	.42797	.09132	.003	.09113	.65
45057	9.342	78.560	14.3241	.3403	.47357	.09072	.003	.09038	.01
45058	8.514	78.122	13.3116	.3416	.38512	.08728	.003	.08721	-.15
45059	8.515	78.397	13.2529	.3418	.42875	.08756	.003	.08732	.18
45060	8.515	78.722	13.1841	.3420	.47478	.08795	.003	.08751	.63
45061	7.532	77.983	11.9483	.3445	.34538	.08321	.002	.08322	-.17
45062	7.532	78.247	11.8958	.3447	.38624	.08366	.003	.08351	.35
45063	7.533	78.708	11.8060	.3449	.43080	.08429	.003	.08385	1.07
45064	6.335	78.221	10.1123	.3464	.34647	.07857	.003	.07843	.31
45065	6.335	78.554	10.0567	.3466	.38785	.07895	.003	.07860	.72
45066	6.336	77.820	10.1819	.3469	.30728	.07838	.003	.07849	.14
45067	5.308	78.031	8.5370	.3484	.30850	.07393	.003	.07391	-.04
45068	5.309	78.368	8.4904	.3486	.34743	.07427	.003	.07403	.29
45069	5.309	78.699	8.4443	.3488	.38894	.07458	.003	.07413	.58
45070	4.027	78.055	6.4697	.3502	.27352	.06887	.002	.06883	.19
45071	4.027	78.423	6.4315	.3504	.31022	.06915	.003	.06888	.39
45072	4.027	78.797	6.3931	.3506	.34961	.07004	.003	.06952	1.45
45073	3.177	77.793	5.1030	.3520	.23961	.06489	.002	.06503	-.70
45074	3.177	78.150	5.0745	.3522	.27398	.06562	.002	.06552	.16
45075	3.177	78.573	5.0412	.3524	.31109	.06599	.002	.06562	.42
45076	2.028	78.170	3.2066	.3540	.24106	.06140	.002	.06129	-.07
45077	2.028	78.548	3.1888	.3542	.27570	.06160	.002	.06124	-.09
45078	2.028	77.816	3.2228	.3544	.20896	.06118	.003	.06130	-.11
45079	1.062	78.135	1.6606	.3562	.21002	.05770	.002	.05761	-1.03
45080	1.062	78.536	1.6514	.3563	.24240	.05825	.002	.05790	-.50
45081	1.062	78.968	1.6417	.3564	.27747	.05851	.002	.05787	-.51

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 225.0 K W/m.K	deviation exp.-calc. percent
50001	65.283	224.406	22.6231	.2500	.48910	.22233	.003	.22270	.18
50002	65.282	225.040	22.5801	.2500	.68162	.22212	.002	.22209	.02
50003	65.277	225.709	22.5344	.2500	.90626	.22195	.001	.22150	-.13
50004	65.278	226.480	22.4830	.2500	1.16370	.22253	.001	.22160	.04
50005	62.011	224.969	21.8632	.2500	.68138	.21770	.002	.21772	-.16
50006	62.011	225.398	21.8348	.2500	.78944	.21828	.002	.21803	.05
50007	62.010	226.093	21.7888	.2500	1.03025	.21768	.001	.21700	-.31
50008	62.011	226.519	21.7610	.2500	1.16288	.21833	.001	.21738	-.06
50009	58.545	225.027	21.0648	.2500	.68085	.21347	.002	.21345	-.17
50010	58.546	225.335	21.0448	.2500	.78939	.21363	.002	.21342	-.14
50011	58.545	226.161	20.9909	.2500	1.03004	.21379	.001	.21307	-.17
50012	58.545	226.522	20.9674	.2500	1.16261	.21415	.001	.21321	-.05
50013	55.131	225.051	20.2479	.2500	.68065	.20941	.002	.20938	-.13
50014	55.131	225.343	20.2291	.2500	.78886	.20975	.002	.20954	-.01
50015	55.130	226.141	20.1780	.2500	1.02962	.20942	.001	.20872	-.28
50016	55.130	226.596	20.1489	.2500	1.16216	.20974	.001	.20876	-.19
50017	51.503	225.127	19.3387	.2500	.68053	.20478	.002	.20470	-.25
50018	51.503	225.419	19.3203	.2500	.78887	.20481	.002	.20455	-.28
50019	51.503	226.218	19.2705	.2500	1.02982	.20511	.002	.20437	-.26
50020	51.504	226.635	19.2446	.2500	1.16254	.20594	.001	.20494	.08
50021	48.012	225.093	18.4307	.2500	.68078	.20105	.002	.20099	-.01
50022	48.012	225.529	18.4040	.2500	.78881	.20087	.002	.20055	-.17
50023	48.011	226.352	18.3536	.2500	1.02983	.20120	.002	.20038	-.14
50024	48.012	226.824	18.3250	.2500	1.16212	.20132	.001	.20022	-.16
50025	44.613	225.224	17.4960	.2500	.68087	.19734	.002	.19721	.17
50026	44.612	225.564	17.4756	.2500	.78919	.19691	.002	.19657	-.11

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adj. Thermal Conductivity Nom. Temperature 275.0 K W/m·K	deviation exp.-calc. percent
50027	44.611	226.418	17.4246	.2500	1.03017	.19740	.001	.19655	-.01
50028	44.611	226.901	17.3961	.2500	1.16261	.19758	.001	.19644	-.01
50029	41.030	225.294	16.4687	.2500	.68081	.19321	.002	.19303	.24
50030	41.031	225.672	16.4470	.2500	.78914	.19292	.002	.19252	.02
50031	41.031	226.629	16.3924	.2500	1.02971	.19313	.001	.19216	-.05
50032	41.032	227.009	16.3710	.2500	1.16262	.19324	.001	.19204	-.07
50033	37.511	225.384	15.4083	.2500	.68071	.18842	.002	.18819	-.09
50034	37.512	225.703	15.3907	.2500	.78927	.18876	.002	.18834	.02
50035	37.512	226.669	15.3377	.2500	1.03010	.18885	.001	.18786	-.12
50036	37.512	227.098	15.3143	.2500	1.16273	.18923	.001	.18799	-.01
50037	34.124	225.484	14.3365	.25	.68061	.18418	.002	.18389	-.25
50038	34.124	224.937	14.3652	.2500	.58040	.18403	.002	.18407	-.21
50039	34.124	226.279	14.2946	.2500	.90542	.18497	.002	.18422	.01
50040	34.124	226.703	14.2724	.2500	1.03010	.18526	.001	.18426	.08
50041	30.527	225.093	13.1650	.2500	.58067	.18017	.003	.18012	-.05
50042	30.526	225.453	13.1468	.2500	.68068	.18052	.002	.18026	.06
50043	30.527	226.365	13.1018	.2500	.90543	.18062	.001	.17982	-.09
50C44	30.527	226.871	13.0771	.2500	1.02995	.18122	.001	.18013	.12
50045	26.973	225.120	11.9219	.2500	.58053	.17628	.002	.17621	.07
50046	26.973	225.528	11.9030	.2500	.68059	.17621	.002	.17590	-.07
50047	26.973	226.416	11.8622	.2500	.90552	.17675	.001	.17593	.02
50048	26.973	226.973	11.8368	.2500	1.03002	.17691	.001	.17576	-.03
50049	23.907	225.201	10.7929	.2500	.58043	.17226	.002	.17214	-.24
50050	23.907	225.602	10.7755	.2500	.68076	.17277	.002	.17242	-.05
50051	23.907	226.471	10.7389	.2500	.90574	.17324	.002	.17239	-.00
50052	23.907	227.050	10.7143	.2500	1.03022	.17340	.001	.17221	-.06
50053	21.069	224.922	9.7146	.2500	.48835	.16888	.003	.16892	-.26
50054	21.068	225.266	9.7008	.2500	.58053	.16939	.002	.16924	-.06
50055	21.068	226.169	9.6654	.2500	.78944	.16990	.002	.16923	-.00
50056	21.067	226.639	9.6471	.2500	.90587	.17011	.001	.16923	.03
50057	18.640	224.632	8.7540	.2500	.40474	.16670	.004	.16691	.14
50058	18.641	225.029	8.7399	.2500	.48892	.16758	.003	.16756	.55
50059	18.641	225.797	8.7126	.2500	.68159	.16773	.002	.16727	.43
50060	18.640	226.240	8.6966	.2500	.79018	.16732	.002	.16661	.05
50061	16.404	224.567	7.8290	.2500	.40372	.16424	.003	.16449	.18
50062	16.403	224.976	7.8153	.2500	.48778	.16458	.003	.16459	.26
50063	16.403	225.826	7.7878	.2500	.68015	.16488	.002	.16441	.20
50064	16.404	226.249	7.7744	.2500	.78850	.16496	.002	.16415	.06
50065	14.229	224.508	6.8981	.2500	.40439	.16101	.004	.16129	-.32
50066	14.228	224.867	6.8874	.2500	.48878	.16211	.003	.16219	.25
50067	14.228	225.835	6.8593	.2500	.68147	.16248	.002	.16200	.18
50068	14.228	226.343	6.8449	.2500	.79019	.16261	.002	.16184	.11
50069	12.350	224.588	6.0651	.2500	.40429	.15974	.004	.15997	.14
50070	12.350	224.187	6.0754	.2500	.32798	.15946	.005	.15992	.09
50071	12.350	225.330	6.0460	.2500	.58097	.16011	.002	.15992	.13
50072	12.349	225.790	6.0339	.2500	.68139	.16071	.002	.16026	.36
50073	10.330	224.211	5.1543	.2500	.32798	.15756	.006	.15801	.26
50074	10.330	224.544	5.1468	.2500	.40421	.15745	.004	.15771	.08
50075	10.329	225.389	5.1280	.2500	.58080	.15785	.002	.15763	.06
50076	10.329	225.927	5.1160	.2500	.68119	.15806	.002	.15753	.01
50077	8.287	224.279	4.1935	.2500	.32790	.15431	.005	.15472	-.45
50078	8.286	224.626	4.1870	.2500	.40411	.15546	.004	.15567	.17
50079	8.286	225.577	4.1697	.2500	.58072	.15560	.003	.15527	-.06
50080	8.285	226.039	4.1610	.2500	.68118	.15585	.002	.15526	-.06
50081	6.214	224.310	3.1905	.2500	.32782	.15299	.005	.15338	.09
50082	6.213	224.667	3.1850	.2500	.40408	.15291	.004	.15310	-.08
50083	6.213	225.569	3.1723	.200	.58060	.15322	.002	.15290	-.20
50084	6.213	226.196	3.1635	.2500	.68090	.15361	.002	.15293	-.16
50086	4.288	224.928	2.2254	.2500	.40516	.15079	.004	.15083	-.26
50087	4.288	225.780	2.2169	.2500	.58239	.15118	.003	.15074	-.31
50088	4.288	226.328	2.2116	.2500	.68317	.15165	.002	.15090	-.19
50089	2.236	224.510	1.1791	.2500	.32879	.14884	.007	.14912	.00
50090	2.235	224.950	1.1764	.2500	.40530	.14885	.005	.14888	-.15
50091	2.235	225.455	1.1736	.2500	.48977	.14949	.004	.14923	.09
50092	2.234	225.974	1.1707	.2500	.58250	.14956	.003	.14901	-.06
50093	.877	224.608	.4670	.2500	.32877	.14856	.017	.14878	.72
50094	.877	224.132	.4678	.2500	.26030	.14704	.018	.14753	-.13
50095	.877	225.034	.4657	.2500	.40508	.14779	.013	.14777	.04
50096	.876	225.551	.4645	.2500	.48972	.14814	.010	.14783	.08
Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adj. Thermal Conductivity Nom. Temperature 275.0 K W/m·K	deviation exp.-calc. percent
51001	67.487	273.381	20.1964	.2500	.49930	.23821	.003	.23910	.19
51002	67.482	274.076	20.1595	.2500	.71668	.23757	.002	.23808	-.15
51003	67.477	274.702	20.1264	.2500	.97351	.23763	.002	.23779	-.20
51004	67.479	275.605	20.0807	.2500	1.26947	.23812	.001	.23779	-.10
51005	63.898	273.526	19.4578	.2500	.60252	.23348	.003	.23428	-.23
51006	63.897	273.884	19.4395	.2500	.71602	.23417	.003	.23478	.02
51007	63.894	274.680	19.3986	.2500	.97246	.23432	.002	.23449	-.01
51008	63.891	275.532	19.3553	.2500	1.26838	.23461	.001	.23432	.00
51009	60.469	273.439	18.7390	.2500	.60324	.23001	.003	.23086	-.18
51010	60.467	273.867	18.7174	.2500	.71717	.23034	.002	.23095	-.09

51011	60.466	274.661	18.6780	.2500	.97442	.23088	.002	.23106	.04
51012	60.466	275.568	18.6333	.2500	1.27095	.23084	.001	.23053	-.09
51013	57.015	273.472	17.9834	.2500	.60337	.22699	.003	.22781	.07
51014	57.012	273.823	17.9656	.2500	.71711	.22661	.002	.22724	-.15
51015	57.011	274.654	17.9251	.2500	.97384	.22670	.002	.22689	-.22
51016	57.010	275.599	17.8795	.2500	1.27030	.22715	.001	.22683	-.16
51017	53.442	273.516	17.1721	.2500	.60329	.22314	.003	.22393	-.01
51018	53.439	273.866	17.1550	.2500	.71707	.22317	.002	.22378	-.05
51019	53.438	274.684	17.1161	.2500	.97371	.22330	.002	.22347	-.11
51020	53.437	275.568	17.0743	.2500	1.27020	.22384	.001	.22354	.00
51021	49.994	273.540	16.3605	.2500	.60374	.21961	.003	.22039	-.02
51022	49.994	273.923	16.3429	.2500	.71774	.22023	.002	.22080	.20
51023	49.994	274.772	16.3041	.2500	.97494	.21982	.002	.21994	-.11
51024	49.994	275.203	16.2845	.2500	1.11830	.22018	.001	.22007	-.01
51025	46.509	273.619	15.5063	.2500	.60374	.21559	.003	.21632	-.25
51026	46.508	273.947	15.4915	.2500	.71749	.21625	.002	.21681	.00
51027	46.507	274.836	15.4521	.2500	.97466	.21625	.002	.21634	-.14
51028	46.506	275.259	15.4332	.2500	1.11823	.21650	.001	.21636	-.09
51029	43.000	273.638	14.6150	.2500	.60362	.21289	.003	.21360	.13
51030	42.999	274.015	14.5986	.2500	.71745	.21272	.002	.21324	-.01
51031	42.999	274.850	14.5631	.2500	.97452	.21285	.002	.21293	-.09
51032	42.998	275.310	14.5435	.2500	1.11802	.21327	.002	.21311	.03
51033	39.533	273.652	13.6988	.2500	.60368	.20900	.002	.20970	-.08
51034	39.533	274.086	13.6811	.2500	.71734	.20893	.002	.20941	-.19
51035	39.532	274.950	13.6458	.2500	.97444	.20970	.001	.20973	.03
51036	39.532	275.386	13.6281	.2500	1.11797	.20995	.001	.20975	.07
51037	36.061	273.285	12.7587	.2500	.49957	.20438	.003	.20527	-.59
51038	36.061	273.676	12.7433	.2500	.60346	.20512	.002	.20581	-.30
51039	36.058	274.517	12.7100	.2500	.84068	.20538	.002	.20563	-.33
51040	36.054	275.016	12.6896	.2500	.97415	.20611	.001	.20610	-.07
51041	32.664	273.339	11.7829	.2500	.49959	.20155	.003	.20241	-.37
51042	32.662	273.748	11.7676	.2500	.60345	.20228	.003	.20293	-.08
51043	32.661	274.568	11.7374	.2500	.84072	.20243	.002	.20265	-.17
51044	32.660	275.061	11.7190	.2500	.97434	.20302	.001	.20299	.03
51045	29.043	273.390	10.6985	.2500	.49947	.19855	.003	.19938	-.13
51046	29.041	273.767	10.6853	.2500	.60348	.19888	.002	.19951	-.04
51047	29.040	274.620	10.6562	.2500	.84102	.19895	.002	.19914	-.18
51048	29.040	275.151	10.6382	.2500	.97449	.19926	.002	.19918	-.13
51053	22.852	272.990	8.7441	.2500	.40505	.19278	.004	.19380	.00
51054	22.851	273.239	8.7365	.2500	.49928	.19322	.003	.19411	.17
51055	22.851	273.638	8.7251	.2500	.60316	.19340	.002	.19409	.18
51056	22.850	274.023	8.7138	.2500	.71690	.19390	.002	.19440	.35
51057	20.257	272.675	7.8814	.2500	.40469	.19041	.004	.19159	.10
51058	20.257	273.103	7.8701	.2500	.49842	.19062	.004	.19158	.11
51059	20.257	273.545	7.8583	.2500	.60204	.19112	.003	.19186	.27
51060	20.256	273.918	7.8484	.2500	.71572	.19146	.002	.19201	.36
51061	17.954	272.671	7.0835	.2500	.40448	.18772	.005	.18890	-.20
51062	17.954	273.029	7.0747	.2500	.49836	.18882	.003	.18982	.30
51063	17.953	273.462	7.0642	.2500	.60194	.18852	.003	.18930	.04
51064	17.953	273.978	7.0518	.2500	.71543	.18879	.002	.18931	.06
51065	15.886	272.708	6.3460	.2500	.40580	.18633	.005	.18749	.05
51066	15.886	273.136	6.3366	.2500	.50012	.18649	.003	.18743	.04
51067	15.885	273.559	6.3274	.2500	.60417	.18670	.003	.18743	.05
51068	15.885	274.484	6.3075	.2500	.84191	.18735	.002	.18761	.17
51069	13.633	273.164	5.5129	.2500	.50016	.18439	.003	.18531	-.01
51070	13.632	273.541	5.5054	.2500	.60423	.18455	.003	.18528	-.01
51071	13.631	274.605	5.4850	.2500	.84187	.18486	.002	.18506	-.11
51072	13.631	275.178	5.4740	.2500	.97542	.18550	.002	.18541	.10
51073	11.534	273.181	4.7242	.2500	.50013	.18226	.003	.18317	-.15
51074	11.533	273.659	4.7162	.2500	.60400	.18262	.003	.18329	-.08
51075	11.533	274.157	4.7080	.2500	.71792	.18306	.002	.18348	.04
51076	11.533	274.718	4.6987	.2500	.84157	.18321	.002	.18335	-.02
51077	9.560	273.189	3.9637	.2500	.50009	.18057	.004	.18148	-.13
51078	9.560	273.701	3.9564	.2500	.60401	.18142	.003	.18207	.21
51079	9.559	274.220	3.9490	.2500	.71792	.18150	.003	.18189	.12
51080	9.558	274.766	3.9411	.2500	.84156	.18158	.002	.18170	.02
51081	7.163	273.344	3.0125	.2500	.49994	.17824	.003	.17907	-.30
51082	7.162	273.759	3.0078	.2500	.60391	.17934	.003	.17996	.20
51083	7.162	274.338	3.0015	.2500	.71776	.17869	.002	.17902	-.32
51084	7.161	274.888	2.9955	.2500	.84148	.17966	.002	.17972	.08
51085	5.095	273.390	2.1703	.2500	.49994	.17699	.004	.17779	-.02
51086	5.095	273.887	2.1663	.2500	.60380	.17710	.003	.17766	-.09
51087	5.094	274.491	2.1615	.2500	.71760	.17706	.003	.17731	-.28
51088	5.094	275.018	2.1572	.2500	.84142	.17773	.002	.17772	-.04
51089	3.102	273.518	1.3375	.2500	.49982	.17516	.006	.17590	-.12
51090	3.102	274.081	1.3347	.2500	.60370	.17571	.005	.17617	.03
51091	3.101	274.653	1.3316	.2500	.71755	.17564	.004	.17581	-.16
51092	3.101	275.261	1.3286	.2500	.84127	.17617	.004	.17604	-.03
51093	1.010	273.647	.4410	.2500	.49967	.17390	.021	.17457	.15
51094	1.009	273.179	.4414	.2500	.40550	.17407	.023	.17498	.38
51095	1.009	274.771	.4387	.2500	.71745	.17398	.018	.17409	-.13
51096	1.008	274.180	.4394	.2500	.60360	.17338	.020	.17379	-.30

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 294.0 K W/m.K	deviation exp.-calc. percent
48001	68.201	294.472	19.3040	.2500	.54185	.24464	.004	.24439	.02
48002	68.201	295.298	19.2656	.2500	.77786	.24519	.003	.24451	.15
48003	68.203	296.045	19.2316	.2500	1.05639	.24544	.002	.24436	.16
48004	68.202	296.886	19.1925	.2500	1.37762	.24602	.001	.24450	.30
48005	68.206	297.548	19.1629	.2500	1.55348	.24605	.002	.24418	.23
48006	64.894	294.603	18.6473	.2500	.54186	.24138	.004	.24106	.01
48007	64.891	295.289	18.6156	.2500	.77779	.24242	.002	.24175	.36
48008	64.897	296.064	18.5814	.2500	1.05619	.24191	.002	.24083	.05
48009	64.897	297.042	18.5374	.2500	1.37706	.24242	.001	.24083	.14
48010	61.437	294.345	17.9572	.2500	.43984	.23741	.005	.23723	-.20
48011	61.437	294.964	17.9296	.2500	.65470	.23856	.003	.23806	.20
48012	61.438	295.714	17.8962	.2500	.91194	.23936	.003	.23847	.44
48013	61.437	296.639	17.8552	.2500	1.21172	.23933	.002	.23796	.31
48014	61.437	297.079	17.8357	.2500	1.37783	.23932	.001	.23772	.25
48015	57.806	294.696	17.1793	.2500	.54215	.23509	.004	.23473	.27
48016	57.806	295.456	17.1463	.2500	.77801	.23532	.002	.23457	.27
48017	57.805	296.254	17.1115	.2500	1.05667	.23551	.002	.23435	.24
48018	57.805	297.254	17.0684	.2500	1.37767	.23595	.001	.23427	.29
48019	54.207	294.796	16.3926	.2500	.54221	.23138	.004	.23097	.17
48020	54.208	295.491	16.3634	.2500	.77840	.23193	.002	.23117	.30
48021	54.207	296.244	16.3316	.2500	1.05731	.23217	.002	.23102	.30
48022	54.207	297.325	16.2862	.2500	1.37817	.23243	.002	.23073	.26
48023	50.785	294.727	15.6250	.2500	.54239	.22807	.004	.22770	.17
48024	50.783	295.958	15.5958	.2500	.77851	.22850	.002	.22777	.25
48025	50.783	296.339	15.5586	.2500	1.05724	.22891	.001	.22772	.30
48026	50.782	297.419	15.5144	.2500	1.37822	.22912	.001	.22738	.23
48027	47.398	294.786	14.8331	.2500	.54230	.22505	.004	.22465	.25
48028	47.398	295.528	14.8038	.2500	.77833	.22504	.002	.22427	.13
48029	47.399	296.356	14.7712	.2500	1.05718	.22594	.002	.22475	.40
48030	47.399	297.501	14.7264	.2500	1.37803	.22618	.001	.22441	.33
48031	43.906	294.812	13.9886	.2500	.54226	.22119	.003	.22078	-.00
48032	43.906	295.571	13.9597	.2500	.77824	.22212	.002	.22133	.29
48033	43.906	296.489	13.9249	.2500	1.05668	.22251	.002	.22126	.32
48034	43.906	297.023	13.9047	.2500	1.21206	.22285	.002	.22133	.39
48035	40.302	295.186	13.0710	.2500	.65502	.21855	.003	.21796	.26
48036	40.302	295.664	13.0537	.2500	.77827	.21925	.002	.21842	.50
48037	40.302	296.556	13.0215	.2500	1.05696	.21925	.002	.21797	.35
48038	40.301	297.094	13.0018	.2500	1.21222	.21957	.001	.21802	.41
48039	36.857	295.251	12.1718	.2500	.65485	.21533	.003	.21471	.24
48040	36.857	295.708	12.1561	.2500	.77812	.21552	.002	.21467	.24
48041	36.856	296.647	12.1237	.2500	1.05668	.21591	.002	.21459	.26
48042	36.856	297.177	12.1055	.2500	1.21200	.21629	.001	.21471	.34
48043	33.618	295.296	11.2955	.2500	.65495	.21217	.002	.21153	.13
48044	33.618	295.772	11.2801	.2500	.77827	.21270	.002	.21182	.30
48045	33.618	296.714	11.2496	.2500	1.05682	.21308	.002	.21174	.30
48046	33.617	297.218	11.2332	.2500	1.21216	.21329	.001	.21170	.31
48047	30.276	295.373	10.3567	.2500	.65484	.20953	.002	.20885	.30
48048	30.275	295.691	10.3470	.2500	.77854	.20980	.002	.20897	.37
48049	30.275	296.806	10.3133	.2500	1.05682	.21025	.001	.20887	.37
48050	30.275	297.397	10.2956	.2500	1.21168	.21026	.001	.20858	.26
48051	27.386	295.390	9.5177	.2500	.65497	.20694	.002	.20626	.29
48052	27.385	295.831	9.5050	.2500	.77880	.20689	.002	.20599	.18
48053	27.384	296.913	9.4743	.2500	1.05746	.20758	.001	.20615	.30
48054	27.384	297.388	9.4610	.2500	1.21311	.20795	.001	.20629	.39
48055	24.579	295.492	8.6737	.2500	.65542	.20435	.002	.20362	.21
48056	24.579	295.922	8.6625	.2500	.77882	.20451	.002	.20357	.20
48057	24.579	296.403	8.6499	.2500	.91298	.20485	.001	.20367	.27
48058	24.578	297.003	8.6341	.2500	1.05756	.20508	.001	.20361	.26
48060	21.923	296.493	7.8285	.2500	.78002	.20257	.002	.20135	.27
48061	21.924	296.958	7.8175	.2500	.91447	.20276	.002	.20132	.26
48062	21.924	297.486	7.8051	.2500	1.05954	.20316	.002	.20146	.35
48063	19.551	296.028	7.0853	.2500	.65611	.20003	.003	.19904	.11
48064	19.550	296.457	7.0759	.2500	.78020	.20024	.002	.19904	.13
48065	19.550	297.042	7.0631	.2500	.91434	.20066	.002	.19918	.21
48066	19.550	297.526	7.0523	.2500	1.05906	.20131	.002	.19959	.43
48067	16.900	296.036	6.2174	.2500	.65637	.19809	.002	.19710	.27
48068	16.900	296.551	6.2074	.2500	.77997	.19788	.002	.19664	.05
48069	16.899	297.049	6.1975	.2500	.91427	.19845	.002	.19697	.23
48070	16.899	297.646	6.1860	.2500	1.05916	.19877	.002	.19700	.26
48071	14.783	295.725	5.5104	.2500	.54335	.19622	.003	.19538	.29
48072	14.783	296.067	5.5043	.2500	.65632	.19625	.002	.19525	.23
48073	14.782	296.652	5.4939	.2500	.77997	.19622	.002	.19494	.08
48074	14.781	297.186	5.4844	.2500	.91412	.19667	.002	.19513	.19
48075	14.781	297.763	5.4744	.2500	1.05912	.19695	.001	.19513	.21
48076	12.314	296.233	4.6482	.2500	.65636	.19424	.002	.19316	.21
48077	12.313	296.732	4.6405	.2500	.77986	.19439	.002	.19307	.18
48078	12.313	297.236	4.6330	.2500	.91416	.19462	.002	.19306	.18
48079	12.313	297.846	4.6238	.2500	1.05935	.19493	.002	.19307	-.20
48080	10.243	295.834	3.9183	.2500	.54333	.19186	.003	.19097	-.05

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 313.5 K W/m.K	deviation exp.-calc. percent
48081	10.243	296.286	3.9123	.2500	.65638	.19244	.003	.19134	.15
48082	10.242	296.815	3.9055	.2500	.78000	.19270	.002	.19134	.16
48083	10.241	297.373	3.8983	.2500	.91431	.19302	.002	.19139	.20
48084	7.839	295.895	3.0405	.2500	.54336	.18964	.004	.18873	-.20
48085	7.839	296.374	3.0356	.2500	.65630	.19088	.003	.18974	.34
48086	7.838	296.940	3.0298	.2500	.77986	.19075	.002	.18933	.13
48087	7.837	297.456	3.0244	.2500	.91419	.19083	.002	.18916	.05
48088	5.600	296.029	2.2000	.2500	.54360	.18816	.003	.18718	-.07
48089	5.599	296.538	2.1961	.2500	.65674	.18843	.004	.18721	-.05
48090	5.599	297.086	2.1918	.2500	.78061	.18913	.002	.18765	.19
48091	5.598	297.689	2.1872	.2500	.91502	.18939	.002	.18762	.18
48092	3.196	296.114	1.2734	.2500	.54390	.18656	.005	.18554	.08
48093	3.195	296.679	1.2707	.2500	.65685	.18670	.007	.18541	.01
48094	3.195	297.240	1.2680	.2500	.78037	.18724	.006	.18568	.16
48095	3.194	297.804	1.2655	.2500	.91507	.18754	.005	.18571	.18
48096	.667	296.172	.2696	.2500	.54309	.18590	.020	.18486	.80
48097	.665	296.673	.2684	.2500	.65637	.18588	.013	.18460	.66
48098	.664	297.340	.2675	.2500	.78000	.18544	.011	.18384	.26
48099	.664	297.999	.2668	.2500	.91433	.18668	.023	.18476	.75

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 313.5 K W/m.K	deviation exp.-calc. percent
49001	67.264	312.846	18.3086	.2500	.80815	.24954	.002	.24987	.15
49002	67.268	313.710	18.2730	.2500	1.09711	.25007	.002	.24996	.26
49003	67.273	314.672	18.2334	.2500	1.43058	.25041	.002	.24982	.28
49004	67.275	315.182	18.2124	.2500	1.61350	.25092	.001	.25007	.42
49005	63.904	312.582	17.6685	.2500	.67987	.24606	.003	.24652	.05
49006	63.905	312.950	17.6534	.2500	.80768	.24654	.002	.24681	.20
49007	63.906	313.693	17.6228	.2500	1.09693	.24711	.002	.24701	.34
49008	63.905	314.733	17.5798	.2500	1.42974	.24772	.001	.24710	.46
49009	60.370	312.567	16.9627	.2500	.67977	.24351	.003	.24397	.36
49010	60.370	312.840	16.9516	.2500	.80781	.24353	.002	.24386	.33
49011	60.371	313.729	16.9157	.2500	1.09691	.24387	.002	.24376	.36
49012	60.366	314.741	16.8741	.2500	1.42986	.24408	.001	.24346	.32
49013	56.886	312.614	16.2416	.2500	.67957	.23944	.002	.23988	.01
49014	56.886	312.944	16.2286	.2500	.80757	.23987	.002	.24014	.14
49015	56.885	313.819	16.1939	.2500	1.09656	.24018	.001	.24002	.15
49016	56.885	314.877	16.1525	.2500	1.42961	.24124	.001	.24056	.45
49017	53.323	312.635	15.4805	.2500	.67951	.23720	.003	.23762	.44
49018	53.322	313.028	15.4654	.2500	.80744	.23692	.002	.23715	.27
49019	53.322	313.831	15.4347	.2500	1.09664	.23739	.001	.23723	.35
49020	53.322	314.898	15.3942	.2500	1.42949	.23795	.002	.23726	.44
49021	49.701	312.650	14.6803	.2500	.67939	.23374	.003	.23415	.37
49022	49.702	313.047	14.6659	.2500	.80745	.23348	.002	.23370	.20
49023	49.702	313.961	14.6324	.2500	1.09626	.23410	.002	.23388	.33
49024	49.702	314.899	14.5981	.2500	1.42954	.23468	.001	.23400	.45
49025	46.273	312.599	13.8989	.2500	.67962	.23086	.002	.23130	.47
49026	46.272	313.024	13.8837	.2500	.80751	.23059	.002	.23082	.29
49027	46.271	313.982	13.8496	.2500	1.09628	.23103	.002	.23080	.34
49028	46.274	315.056	13.8122	.2500	1.42899	.23130	.001	.23055	.29
49029	42.748	312.756	13.0599	.2500	.67938	.22734	.003	.22770	.29
49030	42.751	313.118	13.0482	.2500	.80734	.22781	.002	.22799	.44
49031	42.751	314.066	13.0161	.2500	1.09622	.22813	.002	.22786	.43
49032	42.751	315.103	12.9811	.2500	1.42940	.22826	.001	.22749	.32
49033	39.293	312.771	12.2128	.2500	.67915	.22379	.002	.22414	.06
49034	39.293	313.167	12.1999	.2500	.80723	.22464	.002	.22480	.38
49035	39.293	314.112	12.1695	.2500	1.09602	.22512	.002	.22483	.44
49036	39.291	315.169	12.1353	.2500	1.42912	.22576	.001	.22496	.55
49037	35.795	312.833	11.3229	.2500	.67920	.22136	.003	.22168	.33
49038	35.795	313.124	11.3140	.2500	.80756	.22181	.002	.22199	.49
49039	35.795	314.184	11.2817	.2500	1.09607	.22203	.001	.22170	.41
49040	35.795	315.255	11.2492	.2500	1.42974	.22276	.001	.22192	.55
49041	32.292	312.871	10.3991	.2500	.67927	.21779	.002	.21809	.08
49042	32.292	313.162	10.3907	.2500	.80757	.21891	.002	.21907	.54
49043	32.291	314.234	10.3600	.2500	1.09619	.21913	.002	.21878	.45
49044	32.290	315.340	10.3286	.2500	1.42932	.22001	.001	.21914	.66
49045	28.803	312.895	9.4448	.2500	.67916	.21557	.003	.21586	.41
49046	28.803	313.365	9.4324	.2500	.80706	.21588	.002	.21594	.47
49047	28.803	314.251	9.4091	.2500	1.09616	.21623	.001	.21588	.47
49048	28.802	314.879	9.3925	.2500	1.25667	.21616	.001	.21551	.33
49049	25.907	312.896	8.6258	.2500	.67920	.21318	.003	.21346	.43
49050	25.907	313.349	8.6146	.2500	.80713	.21366	.002	.21373	.57
49051	25.906	314.389	8.5891	.2500	1.09591	.21380	.002	.21338	.45
49052	25.906	314.970	8.5749	.2500	1.25667	.21398	.002	.21329	.42
49053	23.415	312.991	7.8979	.2500	.67921	.21085	.002	.21110	.30
49054	23.415	313.453	7.8872	.2500	.80703	.21144	.002	.21146	.48
49055	23.414	314.492	7.8635	.2500	1.09600	.21202	.002	.21155	.56
49056	23.414	315.090	7.8500	.2500	1.25670	.21214	.001	.21139	.50
49057	21.000	312.627	7.1829	.2500	.56712	.20979	.003	.21020	.80
49058	21.000	312.300	7.1897	.2500	.46004	.20889	.004	.20945	.44
49059	21.000	313.635	7.1619	.2500	.81323	.21011	.002	.21005	.76
49060	21.000	314.139	7.1514	.2500	.95308	.21001	.002	.20971	.61

49061	18.660	312.273	6.4706	.2500	.45971	.20771	.004	.20828	.79
49062	18.660	312.630	6.4636	.2500	.56633	.20802	.004	.20843	.87
49063	18.659	313.514	6.4467	.2500	.81284	.20763	.002	.20762	.51
49064	18.659	314.078	6.4361	.2500	.95248	.20815	.002	.20788	.64
49065	16.279	312.289	5.7184	.2500	.45947	.20507	.004	.20563	.45
49066	16.278	312.675	5.7116	.2500	.56605	.20485	.003	.20523	.26
49067	16.278	313.580	5.6961	.2500	.81235	.20532	.002	.20528	.30
49068	16.277	314.156	5.6863	.2500	.95211	.20621	.003	.20590	.62
49069	13.970	312.242	4.9708	.2500	.45945	.20329	.004	.20388	.49
49070	13.969	312.668	4.9642	.2500	.56602	.20394	.003	.20433	.71
49071	13.969	313.599	4.9502	.2500	.81222	.20386	.002	.20381	.48
49072	13.969	314.200	4.9413	.2500	.95176	.20411	.002	.20378	.48
49073	11.634	312.280	4.1928	.2500	.45921	.20103	.003	.20160	.27
49074	11.633	312.672	4.1876	.2500	.56582	.20143	.003	.20181	.39
49075	11.632	313.669	4.1747	.2500	.81205	.20201	.003	.20193	.46
49076	11.632	314.287	4.1668	.2500	.95156	.20229	.003	.20192	.46
49077	9.309	312.364	3.3981	.2500	.45920	.19957	.004	.20010	.43
49078	9.309	312.806	3.3933	.2500	.56559	.19910	.003	.19942	.10
49079	9.308	313.822	3.3825	.2500	.81183	.19999	.003	.19984	.32
49080	9.307	314.349	3.3768	.2500	.95144	.20019	.003	.19980	.30
49081	6.793	312.399	2.5147	.2500	.45926	.19738	.006	.19789	.30
49082	6.792	312.860	2.5110	.2500	.56579	.19819	.004	.19849	.60
49083	6.791	313.854	2.5028	.2500	.81169	.19832	.002	.19816	.44
49084	6.790	314.559	2.4970	.2500	.95134	.19810	.001	.19761	.17
49085	4.499	312.492	1.6869	.2500	.45921	.19574	.008	.19621	.33
49086	4.498	312.889	1.6847	.2500	.56578	.19585	.004	.19613	.30
49087	4.498	314.037	1.6786	.2500	.81178	.19644	.006	.19619	.33
49088	4.498	314.687	1.6751	.2500	.95133	.19636	.005	.19581	.14
49089	2.427	312.141	.9221	.2500	.36368	.19312	.009	.19375	-.13
49090	2.426	312.413	.9209	.2500	.45915	.19336	.007	.19386	-.06
49091	2.426	313.364	.9180	.2500	.68332	.19418	.006	.19424	.13
49092	2.425	313.922	.9162	.2500	.81199	.19443	.002	.19424	.13
49093	1.009	311.734	.3870	.2500	.27946	.19154	.012	.19235	-.29
49094	1.009	312.130	.3866	.2500	.36367	.19307	.010	.19370	.41
49095	1.009	312.545	.3860	.2500	.45901	.19236	.010	.19280	-.05
49096	1.009	313.068	.3853	.2500	.56547	.19313	.009	.19333	.22
49097	1.007	313.560	.3841	.2500	.68309	.19426	.009	.19423	.68

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 125.0 K W/m.K	deviation exp.-calc. percent
76001	63.517	126.038	31.5280	.2500	.81039	.20899	.001	.20814	-.57
76002	63.517	126.258	31.4992	.2501	.89444	.20873	.001	.20770	-.68
76003	63.515	126.425	31.4770	.2502	.98283	.20903	.001	.20787	-.52
76004	63.515	126.844	31.4225	.2503	1.07654	.20914	.001	.20764	-.43
76005	56.672	126.183	29.8632	.2516	.81186	.19716	.001	.19622	-.36
76006	56.676	126.386	29.8374	.2517	.89597	.19681	.001	.19571	-.53
76007	56.676	126.745	29.7900	.2518	.98461	.19658	.001	.19519	-.62
76008	56.683	125.872	29.9072	.2519	.73129	.19756	.001	.19686	-.19
76009	51.036	126.054	28.3811	.2531	.73223	.18686	.001	.18604	-.36
76010	51.039	126.199	28.3626	.2532	.81169	.18665	.001	.18571	-.47
76011	51.041	126.585	28.3117	.2532	.89648	.18675	.001	.18551	-.40
76012	51.044	125.824	28.2805	.2533	.98492	.18632	.001	.18490	-.62
76013	46.372	126.103	27.0138	.2544	.73237	.17816	.001	.17731	-.36
76014	46.375	125.826	27.0523	.2545	.65637	.17828	.001	.17765	-.31
76015	46.378	126.472	26.9661	.2546	.81318	.17780	.001	.17667	-.56
76016	46.380	126.649	26.9430	.2546	.89770	.17789	.001	.17662	-.50
76017	42.211	125.932	25.7129	.2560	.65731	.17066	.001	.16995	-.13
76018	42.212	126.210	25.6757	.2561	.73298	.17028	.001	.16936	-.35
76019	42.214	126.406	25.6501	.2562	.81347	.17062	.001	.16956	-.15
76020	42.216	126.906	25.5836	.2563	.89882	.17053	.001	.16909	-.20
76021	38.249	126.108	24.3141	.2574	.65781	.16280	.001	.16197	-.23
76022	38.251	126.433	24.2712	.2575	.73394	.16280	.001	.16173	-.24
76023	38.254	126.738	24.2311	.2576	.81456	.16292	.001	.16162	-.17
76024	38.255	126.995	24.1974	.2577	.89920	.16317	.001	.16168	-.03
76025	34.728	125.862	23.0155	.2589	.58654	.15617	.001	.15553	-.03
76026	34.731	126.196	22.9717	.2590	.65848	.15563	.001	.15475	-.39
76027	34.732	126.408	22.9439	.2590	.73439	.15569	.001	.15465	-.37
76028	34.733	126.827	22.8883	.2591	.81518	.15585	.001	.15451	-.28
76029	31.282	125.922	21.5861	.2603	.58678	.14915	.002	.14848	-.10
75030	31.285	126.310	21.5357	.2604	.65889	.14911	.001	.14816	-.15
76031	31.286	126.536	21.5064	.2604	.73498	.14911	.001	.14799	-.17
76032	31.287	126.898	21.4595	.2605	.81576	.14903	.001	.14765	-.26
76033	28.212	125.886	20.2110	.2617	.52017	.14332	.002	.14268	.20
76034	28.213	126.090	20.1847	.2618	.58741	.14323	.001	.14245	.12
76035	28.214	126.417	20.1427	.2619	.65965	.14320	.001	.14218	.06
76036	28.215	126.778	20.0967	.2619	.73618	.14305	.001	.14177	-.09
76037	25.473	125.981	18.8642	.2935	.52009	.13875	.002	.13804	.34
76038	25.474	126.287	18.8259	.2936	.58803	.13880	.001	.13787	.33
76039	25.476	126.698	18.7746	.2936	.66020	.13882	.001	.13759	.28
76040	25.476	126.972	18.7400	.2937	.73658	.13879	.001	.13736	.22
76041	23.045	126.080	17.5772	.2948	.52034	.13328	.001	.13250	.02
76042	23.046	126.384	17.5405	.2949	.58824	.13350	.001	.13250	.13

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 125.0 K W/m.K	deviation exp.-calc. percent
76043	23.048	126.701	17.5026	.2949	.66051	.13363	.001	.13241	.16
76044	23.049	127.096	17.4550	.2950	.73729	.13360	.001	.13209	.06
76045	20.333	125.834	16.0685	.2960	.45705	.12765	.001	.12706	.12
76046	20.334	126.245	16.0210	.2961	.52084	.12765	.001	.12676	.03
76047	20.335	126.466	15.9958	.2962	.58870	.12777	.001	.12672	.07
76048	20.336	126.861	15.9501	.2962	.66099	.12780	.001	.12647	-.01
76049	18.349	125.950	14.8467	.2973	.45769	.12359	.001	.12292	.19
76050	18.350	126.245	14.8143	.2974	.52115	.12357	.001	.12269	.09
76051	18.352	126.689	14.7657	.2975	.58948	.12371	.001	.12251	.08
76052	18.352	127.016	14.7300	.2976	.66181	.12368	.001	.12225	-.04
76053	16.180	125.941	13.4390	.2985	.45765	.11901	.001	.11835	.19
76054	16.181	126.333	13.3990	.2986	.52156	.11916	.001	.11822	.18
76055	16.182	126.803	13.3507	.2987	.58980	.11922	.001	.11795	.08
76056	16.183	127.138	13.3166	.2988	.66223	.11917	.001	.11766	-.07
76057	14.304	125.737	12.1640	.3001	.39863	.11505	.001	.11453	.23
76058	14.304	126.000	12.1394	.3001	.45791	.11492	.001	.11422	.02
76059	14.304	126.363	12.1036	.3002	.52176	.11513	.001	.11417	.07
76060	14.304	126.963	12.0461	.3003	.59061	.11542	.001	.11404	.10
76061	12.491	125.915	10.8242	.3013	.39892	.11124	.001	.11060	.14
76062	12.491	126.318	10.7894	.3014	.45877	.11147	.001	.11055	.18
76063	12.491	126.663	10.7592	.3015	.52257	.11138	.001	.11022	-.05
76064	12.492	127.066	10.7247	.3016	.59109	.11162	.001	.11018	-.00
76065	10.746	125.686	9.5039	.3026	.34388	.10739	.004	.10691	.01
76066	10.746	126.034	9.4765	.3027	.39925	.10768	.002	.10696	.11
76067	10.747	126.428	9.4463	.3028	.45890	.10777	.002	.10678	.01
76068	10.747	126.795	9.4178	.3029	.52288	.10787	.001	.10662	-.06
76069	9.007	125.761	8.0985	.3044	.34442	.10395	.002	.10342	.05
76070	9.007	126.038	8.0797	.3045	.39975	.10415	.001	.10343	.10
76071	9.007	126.435	8.0530	.3046	.45962	.10440	.001	.10340	.13
76072	9.007	126.959	8.0180	.3047	.52413	.10450	.001	.10314	-.04
76073	7.340	125.452	6.7170	.3058	.29321	.10033	.002	.10002	-.08
76074	7.340	125.869	6.6935	.3058	.34458	.10061	.002	.10001	-.03
76075	7.339	126.198	6.6747	.3059	.39995	.10076	.001	.09993	-.07
76076	7.340	126.597	6.6527	.3060	.45998	.10094	.001	.09983	-.11
76077	5.932	125.581	5.4859	.3070	.29336	.09782	.002	.09742	.10
76078	5.932	125.873	5.4724	.3071	.34467	.09784	.001	.09724	-.06
76079	5.932	126.384	5.4490	.3072	.40052	.09813	.001	.09717	-.08
76080	5.932	126.857	5.4275	.3072	.46057	.09826	.001	.09698	-.23
76081	4.429	125.692	4.1369	.3088	.29353	.09501	.002	.09453	.08
76082	4.429	126.047	4.1246	.3088	.34482	.09514	.001	.09442	-.01
76083	4.429	126.532	4.1080	.3089	.40062	.09530	.001	.09424	-.16
76084	4.429	126.999	4.0921	.3090	.46075	.09552	.001	.09414	-.24
76085	2.893	125.557	2.7317	.3099	.24678	.09185	.004	.09147	-.14
76086	2.892	125.956	2.7223	.3099	.29398	.09254	.002	.09188	.33
76087	2.893	126.307	2.7148	.3100	.34527	.09202	.001	.09112	-.49
76088	2.892	126.725	2.7048	.3101	.40113	.09266	.002	.09147	-.08
76089	1.456	125.724	1.3836	.3114	.24709	.08920	.002	.08870	-.33
76090	1.456	126.041	1.3797	.3115	.29426	.08940	.002	.08868	-.35
76091	1.455	126.558	1.3740	.3115	.34598	.08955	.002	.08848	-.57
76092	1.456	127.085	1.3681	.3116	.40227	.08999	.001	.08855	-.47

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 125.0 K W/m.K	deviation exp.-calc. percent
75001	12.728	125.345	11.0524	.2500	.34298	.11028	.002	.11005	.38
75002	12.727	125.709	11.0191	.2500	.39824	.11064	.002	.11016	.57
75003	12.727	126.129	10.9813	.2500	.45795	.11072	.001	.10995	.48
75004	12.727	126.549	10.9439	.2500	.52196	.11095	.001	.10990	.53
75005	11.333	125.391	9.9868	.2500	.34309	.10746	.002	.10720	.47
75006	11.334	125.813	9.9523	.2500	.39832	.10730	.001	.10675	.14
75007	11.334	126.140	9.9255	.2500	.45778	.10783	.001	.10706	.50
75008	11.334	126.665	9.8828	.2500	.52199	.10800	.001	.10687	.43
75009	9.891	125.636	8.8273	.2500	.34357	.10420	.003	.10377	.11
75010	9.892	125.882	8.8095	.2500	.39883	.10471	.001	.10412	.49
75011	9.892	126.182	8.7875	.2500	.45837	.10480	.001	.10400	.44
75012	9.892	126.734	8.7480	.2500	.52265	.10503	.001	.10386	.40
75013	8.514	125.709	7.6938	.2500	.34379	.10179	.002	.10131	.48
75014	8.514	126.053	7.6720	.2500	.39899	.10183	.001	.10112	.34
75015	8.514	126.405	7.6494	.2500	.45875	.10206	.001	.10112	.39
75016	8.514	126.936	7.6157	.2500	.52306	.10224	.001	.10094	.30
75017	6.949	125.643	6.3701	.2500	.34364	.09846	.001	.09803	.34
75018	6.949	126.050	6.3482	.2500	.39911	.09874	.001	.09804	.40
75019	6.949	126.518	6.3237	.2500	.45901	.09897	.001	.09795	.37
75020	6.949	125.339	6.3868	.2500	.29249	.09818	.001	.09795	.22
75021	5.572	125.848	5.1550	.2500	.34414	.09570	.001	.09513	.17
75022	5.572	126.285	5.1361	.2500	.39984	.09611	.001	.09525	.34
75023	5.572	126.665	5.1198	.2500	.45988	.09634	.001	.09523	.35
75024	5.572	125.524	5.1690	.2500	.29300	.09554	.002	.09519	.20
75025	4.065	125.694	3.8065	.2500	.29331	.09274	.001	.09228	.21
75026	4.065	125.956	3.7982	.2500	.34453	.09285	.001	.09221	.16
75027	4.065	126.485	3.7815	.2500	.40042	.09334	.001	.09235	.34
75028	4.065	126.925	3.7678	.2500	.46048	.09362	.001	.09234	.36
75029	2.652	125.328	2.5128	.2500	.24635	.08962	.002	.08940	-.06

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adj. Thermal Conductivity Nom. Temperature 100.0 K W/m·K	deviation exp.-calc. percent
75030	2.652	125.827	2.5025	.2500	.29359	.09011	.001	.08956	.14
75031	2.652	126.312	2.4925	.2500	.34503	.09038	.001	.08951	.11
75032	2.652	126.624	2.4861	.2500	.40071	.09065	.001	.08957	.19
75033	1.169	125.624	1.1138	.2500	.24683	.08693	.001	.08652	-.25
75034	1.169	126.081	1.1096	.2500	.29421	.08699	.001	.08627	-.52
75035	1.169	126.492	1.1060	.2500	.34569	.08733	.001	.08634	-.43
75036	1.169	125.080	1.1187	.2500	.20368	.08658	.002	.08653	-.24
75037	.424	125.329	.4064	.2500	.20388	.08516	.004	.08494	-.52
75038	.424	125.700	.4052	.2500	.24683	.08542	.004	.08496	-.50
75039	.424	126.170	.4037	.2500	.29431	.08563	.002	.08485	-.62
75040	.424	126.681	.4021	.2500	.34591	.08562	.002	.08450	-1.03
77001	11.216	103.400	12.1546	.2500	.35296	.09744	.001	.09530	-1.04
77002	11.216	103.754	12.1092	.2500	.40301	.09769	.001	.09532	-.87
77003	11.216	103.938	12.0855	.2500	.45536	.09745	.001	.09497	-1.18
77004	11.215	104.462	12.0189	.2500	.51226	.09762	.001	.09481	-1.15
77005	9.842	103.118	10.8769	.2500	.30707	.09387	.002	.09192	-.86
77006	9.843	103.506	10.8326	.2500	.35325	.09389	.002	.09169	-.97
77007	9.843	103.845	10.7936	.2500	.40289	.09387	.001	.09146	-1.11
77008	9.843	104.174	10.7558	.2500	.45608	.09406	.001	.09144	-1.01
77009	8.449	103.237	9.4674	.2500	.30742	.09030	.002	.08827	-.76
77010	8.450	103.577	9.4332	.2500	.35375	.09014	.002	.08789	-1.09
77011	8.451	104.049	9.3859	.2500	.40387	.09048	.001	.08794	-.90
77012	8.452	102.860	9.5095	.2500	.26446	.08999	.002	.08819	-.97
77013	6.896	103.170	7.8434	.2500	.26510	.08642	.002	.08441	-.51
77014	6.897	103.371	7.8266	.2500	.30779	.08627	.002	.08413	-.79
77015	6.897	103.763	7.7936	.2500	.35426	.08637	.001	.08399	-.87
77016	6.897	104.141	7.7622	.2500	.40421	.08651	.001	.08389	-.90
77017	5.557	102.997	6.3946	.2500	.22585	.08278	.002	.08086	-.64
77018	5.557	103.102	6.3873	.2500	.26521	.08271	.002	.08072	-.79
77019	5.557	103.523	6.3586	.2500	.30835	.08276	.001	.08050	-.99
77020	5.557	103.939	6.3300	.2500	.35510	.08294	.001	.08041	-1.01
77021	4.111	103.051	4.7657	.2500	.22604	.07930	.001	.07732	-.51
77022	4.111	103.299	4.7530	.2500	.26561	.07913	.001	.07698	-.90
77023	4.112	103.779	4.7291	.2500	.30909	.07944	.001	.07698	-.84
77024	4.112	104.134	4.7117	.2500	.35575	.07945	.001	.07676	-1.08
77025	2.775	103.220	3.2258	.2500	.22648	.07598	.002	.07386	-.78
77026	2.775	103.567	3.2145	.2500	.26642	.07618	.001	.07383	-.78
77027	2.775	104.008	3.1998	.2500	.30984	.07637	.001	.07374	-.88
77028	2.775	104.494	3.1838	.2500	.35685	.07662	.001	.07367	-.93
77029	1.287	103.001	1.5029	.2500	.19011	.07234	.002	.07035	-.91
77030	1.286	103.440	1.4959	.2500	.22696	.07264	.002	.07036	-.88
77031	1.286	103.904	1.4889	.2500	.26708	.07278	.001	.07019	-1.10
77032	1.286	104.355	1.4822	.2500	.31079	.07309	.001	.07020	-1.06
77033	.556	103.129	.6490	.2500	.19037	.07083	.005	.06875	-.87
77034	.556	103.520	.6465	.2500	.22712	.07105	.004	.06871	-.93
77035	.556	103.833	.6441	.2500	.26702	.07133	.004	.06878	-.81
77036	.556	104.556	.6396	.2500	.31138	.07187	.004	.06884	-.71

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 100.0 K W/m.K	deviation exp.-calc. percent
59001	11.521	98.763	13.0789	.9979	.33528	.10771	.002	.10891	-1.97
59002	11.522	99.046	13.0380	.9979	.38252	.10881	.001	.10974	-1.10
59003	11.522	99.708	12.9430	.9979	.48664	.10911	.001	.10939	-1.16
59004	11.522	99.976	12.9051	.9979	.54353	.10904	.001	.10906	-1.36
59005	10.078	98.887	11.6415	.9979	.33588	.10420	.001	.10528	-1.53
59006	10.078	99.200	11.6001	.9979	.38317	.10487	.001	.10564	-1.07
59007	10.079	99.544	11.5557	.9979	.43353	.10512	.001	.10556	-1.03
59008	10.080	99.932	11.5057	.9979	.48756	.10481	.002	.10488	-1.56
59009	8.669	99.028	10.1606	.9979	.33629	.10073	.002	.10167	-1.14
59010	8.670	99.327	10.1264	.9979	.38344	.10080	.001	.10145	-1.27
59011	8.671	99.700	10.0839	.9979	.43410	.10109	.001	.10138	-1.23
59012	8.571	99.925	10.0584	.9979	.48757	.10142	.001	.10149	-1.05
59013	7.144	98.899	8.5086	.9979	.29290	.09661	.001	.09768	-.89
59014	7.145	99.113	8.4882	.9979	.33666	.09646	.001	.09732	-1.21
59015	7.145	99.514	8.4494	.9979	.38430	.09685	.001	.09732	-1.11
59016	7.146	99.944	8.4085	.9979	.43544	.09721	.002	.09726	-1.07
59017	5.790	98.949	6.9620	.9979	.29308	.09264	.002	.09367	-1.18
59018	5.790	99.303	6.9340	.9979	.33737	.09319	.001	.09387	-.89
59019	5.790	99.620	6.9092	.9979	.38469	.09338	.001	.09375	-.96
59020	5.790	100.007	6.8787	.9979	.43561	.09368	.001	.09367	-.97
59021	4.370	98.779	5.3046	.9979	.25255	.08903	.001	.09024	-.80
59022	4.370	99.059	5.2881	.9979	.29335	.08928	.001	.09021	-.79
59023	4.370	99.472	5.2639	.9979	.33788	.08970	.001	.09022	-.72
59024	4.370	99.801	5.2443	.9979	.38540	.08981	.001	.09001	-.91
59025	2.958	98.931	3.5998	.9979	.25286	.08563	.001	.08670	-.67
59026	2.958	99.251	3.5875	.9979	.29385	.08577	.001	.08652	-.85
59027	2.958	99.643	3.5724	.9979	.33831	.08630	.001	.08666	-.65
59028	2.958	99.988	3.5589	.9979	.38620	.08664	.001	.08665	-.62
59029	1.442	98.790	1.7595	.9979	.21531	.08166	.001	.08287	-.82
59030	1.442	99.167	1.7524	.9979	.25337	.08211	.001	.08295	-.72
59031	1.442	99.586	1.7447	.9979	.29475	.08251	.001	.08293	-.73
59032	1.442	100.018	1.7367	.9979	.33948	.08282	.001	.08280	-.86

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 125.0 K W/m.K	deviation exp.-calc. percent
58001	11.634	123.793	10.3559	.9979	.39324	.12715	.001	.12833	-.55
58002	11.634	124.037	10.3347	.9979	.45195	.12706	.001	.12800	-.76
58003	11.634	124.354	10.3077	.9979	.51485	.12743	.002	.12806	-.65
58004	11.634	124.745	10.2743	.9979	.58187	.12807	.001	.12832	-.38
58005	10.210	123.830	9.2218	.9979	.39347	.12453	.002	.12567	-.27
58006	10.210	124.192	9.1939	.9979	.45226	.12470	.001	.12549	-.36
58007	10.210	124.479	9.1719	.9979	.51511	.12484	.001	.12535	-.42
58008	10.211	124.902	9.1395	.9979	.58267	.12522	.001	.12532	-.38
58009	8.722	123.945	7.9851	.9979	.39378	.12161	.001	.12263	-.20
58010	8.722	124.341	7.9584	.9979	.45262	.12181	.002	.12245	-.30
58011	8.722	124.597	7.9411	.9979	.51555	.12168	.002	.12207	-.57
58012	8.722	125.019	7.9131	.9979	.58305	.12246	.001	.12244	-.21
58013	7.186	124.021	6.6660	.9979	.39400	.11841	.001	.11940	-.27
58014	7.187	124.385	6.6456	.9979	.45292	.11892	.001	.11952	-.13
58015	7.187	124.754	6.6247	.9979	.51608	.11901	.001	.11925	-.32
58016	7.187	125.185	6.6005	.9979	.58389	.11968	.002	.11950	-.06
58017	5.440	124.143	5.1117	.9979	.39443	.11549	.001	.11632	.09
58018	5.440	123.774	5.1279	.9979	.33963	.11527	.001	.11646	.18
58019	5.440	124.504	5.0960	.9979	.45335	.11602	.001	.11650	.28
58020	5.440	124.899	5.0789	.9979	.51658	.11580	.002	.11590	-.21
58021	4.223	123.851	4.0123	.9979	.33983	.11221	.001	.11332	-.47
58022	4.223	124.288	3.9974	.9979	.39473	.11340	.001	.11409	.23
58023	4.223	124.712	3.9831	.9979	.45383	.11369	.001	.11397	.15
58024	4.223	125.153	3.9683	.9979	.51727	.11372	.001	.11357	-.17
58025	2.848	124.050	2.7243	.9979	.34006	.11025	.002	.11117	-.04
58026	2.848	124.495	2.7141	.9979	.39514	.11085	.001	.11134	.13
58027	2.848	124.877	2.7055	.9979	.45422	.11113	.001	.11125	.06
58028	2.848	125.265	2.6968	.9979	.51779	.11136	.001	.11110	-.05
58029	1.531	123.922	1.4763	.9979	.28992	.10774	.002	.10878	.01
58030	1.531	124.347	1.4708	.9979	.34064	.10785	.001	.10848	-.25
58031	1.531	124.703	1.4665	.9979	.39553	.10849	.001	.10878	.03
58032	1.531	125.140	1.4612	.9979	.45501	.10894	.001	.10881	.07

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 175.0 K W/m.K	deviation exp.-calc. percent
56001	11.850	173.041	7.5158	.9979	.43338	.15851	.002	.15960	-.07
56002	11.849	173.458	7.4979	.9979	.50861	.15946	.001	.16032	.41
56003	11.849	173.724	7.4866	.9979	.59008	.15899	.001	.15970	.04
56004	11.849	174.101	7.4705	.9979	.67747	.15932	.001	.15982	.14
56005	10.398	173.114	6.6726	.9979	.43343	.15710	.001	.15815	.32
56006	10.398	173.480	6.6587	.9979	.50841	.15671	.002	.15755	-.03
56007	10.398	173.811	6.6462	.9979	.58984	.15674	.001	.15740	-.11
56008	10.398	174.133	6.6341	.9979	.67724	.15696	.001	.15744	-.07
56009	8.859	173.022	5.7603	.9979	.43346	.15573	.004	.15683	.85
56010	8.859	173.422	5.7471	.9979	.50857	.15499	.001	.15586	.26
56011	8.859	173.858	5.7327	.9979	.59013	.15484	.001	.15547	.03
56012	8.859	174.262	5.7195	.9979	.67753	.15552	.002	.15593	.35
56013	7.333	173.176	4.8224	.9979	.43379	.15228	.002	.15329	-.05
56014	7.333	173.492	4.8136	.9979	.50896	.15279	.001	.15362	.19
56015	7.333	173.910	4.8021	.9979	.59045	.15303	.001	.15363	.21
56016	7.333	174.435	4.7876	.9979	.67811	.15329	.001	.15360	.21
56017	5.971	173.301	3.9659	.9979	.43383	.15055	.002	.15149	.00
56018	5.971	173.680	3.9572	.9979	.50908	.15076	.002	.15149	.01
56019	5.971	173.995	3.9501	.9979	.59048	.15146	.001	.15201	.37
56020	5.971	174.450	3.9397	.9979	.67817	.15119	.001	.15149	.04
56021	4.560	173.330	3.0611	.9979	.43392	.14880	.002	.14972	.10
56022	4.560	173.700	3.0546	.9979	.50922	.14907	.001	.14979	.15
56023	4.560	174.179	3.0461	.9979	.59065	.14937	.001	.14982	.19
56024	4.560	174.606	3.0386	.9979	.67831	.14965	.001	.14987	.23
56025	3.200	173.446	2.1683	.9979	.43411	.14681	.002	.14766	-.06
56027	3.199	174.201	2.1584	.9979	.59149	.14742	.001	.14786	.08
56028	3.199	174.830	2.1506	.9979	.67962	.14759	.001	.14768	-.02
56029	1.781	172.760	1.2241	.9979	.30223	.14542	.005	.14665	.52
56030	1.781	173.101	1.2217	.9979	.36540	.14462	.005	.14566	-.15
56031	1.781	173.919	1.2159	.9979	.51039	.14584	.003	.14643	.38
56032	1.780	174.400	1.2123	.9979	.59203	.14597	.002	.14630	.30
56033	1.059	172.754	.7316	.9979	.30219	.14403	.012	.14526	.23
56034	1.059	173.127	.7300	.9979	.36531	.14558	.008	.14661	1.14
56035	1.059	173.424	.7288	.9979	.43465	.14401	.006	.14488	-.04
56036	1.059	173.957	.7266	.9979	.51015	.14571	.006	.14628	.93

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 200.0 K W/m.K	deviation exp.-calc. percent
55001	12.020	198.874	6.6506	.9979	.50724	.16859	.001	.16909	-.36
55002	12.020	199.265	6.6381	.9979	.59505	.16823	.003	.16856	-.66
55003	12.020	199.646	6.6258	.9979	.68993	.16917	.001	.16933	-.18
55004	12.020	200.108	6.6110	.9979	.79196	.16907	.001	.16903	-.34
55005	10.561	198.906	5.9080	.9979	.50735	.16742	.002	.16791	-.00
55006	10.561	199.358	5.8949	.9979	.59497	.16664	.001	.16693	-.57
55007	10.561	199.703	5.8850	.9979	.69006	.16711	.001	.16724	-.37
55008	10.561	200.163	5.8719	.9979	.79205	.16726	.001	.16719	-.38
55009	9.147	198.954	5.1706	.9979	.50730	.16518	.002	.16565	-.34
55010	9.147	199.428	5.1586	.9979	.59512	.16517	.001	.16543	-.45
55011	9.147	199.744	5.1506	.9979	.69011	.16551	.001	.16562	-.32
55012	9.147	200.199	5.1391	.9979	.79226	.16567	.001	.16559	-.33
55013	7.723	198.964	4.4124	.9979	.50734	.16363	.001	.16409	-.25
55014	7.723	199.409	4.4027	.9979	.59512	.16388	.001	.16414	-.20
55015	7.723	199.840	4.3934	.9979	.69030	.16383	.001	.16390	-.34
55016	7.723	200.378	4.3817	.9979	.79237	.16409	.001	.16394	-.30
55017	6.403	198.658	3.7002	.9979	.42668	.16162	.002	.16222	-.45
55018	6.403	199.073	3.6926	.9979	.50729	.16195	.001	.16236	-.35
55019	6.403	199.477	3.6852	.9979	.59508	.15232	.001	.16255	-.22
55020	6.403	200.049	3.6746	.9979	.68996	.16217	.001	.16215	-.45
55021	5.000	198.772	2.9178	.9979	.42662	.15983	.002	.16037	-.57
55022	5.000	199.194	2.9117	.9979	.50734	.16035	.002	.16071	-.35
55023	5.000	199.597	2.9059	.9979	.59509	.16005	.002	.16023	-.64
55024	5.000	200.071	2.8990	.9979	.69018	.16071	.001	.16068	-.35
55025	3.533	198.826	2.0834	.9979	.42631	.15801	.002	.15853	-.66
55026	3.533	199.207	2.0794	.9979	.50735	.15860	.002	.15895	-.39
55027	3.533	199.695	2.0743	.9979	.59526	.15896	.002	.15910	-.29
55028	3.533	200.164	2.0693	.9979	.69030	.15883	.001	.15876	-.49
55029	2.244	198.576	1.3373	.9979	.35292	.15654	.004	.15717	-.58
55030	2.243	198.850	1.3352	.9979	.42658	.15698	.003	.15749	-.37
55031	2.243	199.258	1.3325	.9979	.50744	.15652	.003	.15685	-.78
55032	2.243	199.785	1.3290	.9979	.59533	.15738	.003	.15748	-.38
55033	1.002	198.462	.6031	.9979	.35279	.15581	.012	.15649	-.10
55034	1.002	198.828	.6020	.9979	.42645	.15532	.012	.15584	-.52
55035	1.002	199.297	.6006	.9979	.50713	.15516	.010	.15547	-.75
55036	1.002	199.735	.5991	.9979	.59505	.15551	.008	.15563	-.65

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 225.0 K W/m.K	deviation exp.-calc. percent
54001	11.782	223.012	5.8487	.9979	.40191	.17683	.003	.17756	.05
54002	11.782	223.340	5.8404	.9979	.48575	.17658	.002	.17719	-.15
54003	11.782	223.692	5.8316	.9979	.57742	.17661	.002	.17709	-.20
54004	11.782	224.210	5.8187	.9979	.67710	.17683	.001	.17712	-.16
54005	11.782	224.682	5.8070	.9979	.78479	.17669	.001	.17681	-.33
54006	11.781	225.149	5.7953	.9979	.90091	.17678	.001	.17672	-.36
54007	10.368	223.405	5.1901	.9979	.48568	.17417	.002	.17476	-.67
54008	10.369	223.794	5.1816	.9979	.57740	.17505	.001	.17549	-.24
54009	10.369	224.229	5.1719	.9979	.67716	.17488	.001	.17516	-.41
54010	10.369	224.693	5.1616	.9979	.78499	.17551	.001	.17562	-.14
54011	8.850	223.521	4.4757	.9979	.48545	.17302	.002	.17356	-.42
54012	8.850	223.859	4.4691	.9979	.57739	.17338	.002	.17380	-.28
54013	8.850	224.276	4.4611	.9979	.67714	.17328	.001	.17355	-.42
54014	8.850	224.771	4.4515	.9979	.78495	.17360	.001	.17368	-.32
54015	7.361	223.451	3.7631	.9979	.48567	.17166	.002	.17223	-.29
54016	7.361	223.880	3.7561	.9979	.57745	.17141	.001	.17182	-.51
54017	7.361	224.367	3.7481	.9979	.67726	.17204	.001	.17227	-.24
54018	7.361	224.877	3.7398	.9979	.78508	.17205	.001	.17210	-.33
54019	6.059	223.536	3.1248	.9979	.48569	.17020	.002	.17074	-.36
54020	6.059	223.991	3.1186	.9979	.57753	.16991	.001	.17028	-.62
54021	6.059	224.490	3.1117	.9979	.67719	.17041	.001	.17060	-.42
54022	6.059	224.960	3.1054	.9979	.78512	.17089	.001	.17090	-.23
54023	4.628	223.626	2.4096	.9979	.48564	.16807	.002	.16857	-.76
54024	4.628	224.059	2.4050	.9979	.57746	.16867	.001	.16901	-.49
54025	4.628	224.547	2.3998	.9979	.67721	.16859	.001	.16876	-.64
54026	4.628	225.094	2.3941	.9979	.78513	.16922	.001	.16919	-.37
54027	3.259	223.690	1.7181	.9979	.48586	.16673	.002	.16721	-.74
54028	3.259	224.186	1.7161	.9979	.57771	.16775	.001	.16805	-.23
54029	3.269	224.699	1.7104	.9979	.67749	.16748	.001	.16759	-.50
54030	3.269	223.292	1.7211	.9979	.40197	.16673	.002	.16735	-.65
54031	1.842	223.183	.9799	.9979	.40190	.16542	.003	.16608	-.53
54032	1.842	223.629	.9780	.9979	.48563	.16613	.002	.16663	-.20
54033	1.842	224.070	.9759	.9979	.57747	.16559	.002	.16593	-.62
54034	1.842	224.580	.9737	.9979	.67724	.16620	.002	.16635	-.36
54035	.987	223.280	.5280	.9979	.40181	.16450	.009	.16513	-.58
54036	.987	223.694	.5270	.9979	.48554	.16456	.007	.16504	-.63
54037	.986	224.088	.5257	.9979	.57748	.16555	.006	.16588	-.12
54038	.986	224.552	.5246	.9979	.67720	.16490	.005	.16506	-.61

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 150.0 K W/m.K	deviation exp.-calc. percent
57001	11.718	148.367	8.6654	.9979	.42424	.14529	.001	.14662	.13
57002	11.718	148.697	8.6461	.9979	.49217	.14561	.001	.14667	.20
57003	11.718	149.030	8.6266	.9979	.56531	.14574	.001	.14653	.14
57004	11.718	149.498	8.5996	.9979	.64386	.14590	.001	.14631	.03
57005	10.293	148.471	7.7065	.9979	.42438	.14263	.002	.14387	-.09
57006	10.293	148.759	7.6914	.9979	.49239	.14271	.002	.14372	-.17
57007	10.293	149.090	7.6741	.9979	.56559	.14357	.002	.14431	.27
57008	10.293	149.480	7.6539	.9979	.64402	.14375	.001	.14417	.21
57009	8.820	148.454	6.6914	.9979	.42455	.14026	.002	.14152	-.02
57010	8.821	148.793	6.6761	.9979	.49246	.14061	.002	.14159	.06
57011	8.821	149.284	6.6538	.9979	.56570	.14123	.001	.14181	.25
57012	8.821	149.644	6.6375	.9979	.64437	.14118	.001	.14147	.04
57013	7.343	148.504	5.6387	.9979	.42471	.13796	.002	.13917	.05
57014	7.343	148.943	5.6219	.9979	.49271	.13896	.002	.13982	.54
57015	7.343	149.353	5.6062	.9979	.56616	.13904	.001	.13956	.38
57016	7.343	149.692	5.5932	.9979	.64479	.13911	.001	.13936	.26
57017	6.100	148.314	4.7385	.9979	.36193	.13604	.003	.13740	.22
57018	6.100	148.634	4.7281	.9979	.42478	.13611	.002	.13722	.10
57019	6.100	149.004	4.7161	.9979	.49298	.13680	.001	.13761	.40
57020	6.100	149.384	4.7038	.9979	.56631	.13668	.002	.13718	.11
57021	4.633	148.371	3.6381	.9979	.36214	.13401	.001	.13533	.43
57022	4.633	148.668	3.6307	.9979	.42503	.13390	.002	.13498	.18
57023	4.633	149.180	3.6180	.9979	.49332	.13449	.001	.13515	.33
57024	4.633	149.601	3.6076	.9979	.56686	.13475	.001	.13507	.29
57025	3.251	148.493	2.5770	.9979	.36219	.13174	.002	.13296	.30
57026	3.251	148.892	2.5699	.9979	.42539	.13215	.001	.13304	.37
57027	3.251	149.205	2.5644	.9979	.49352	.13244	.001	.13308	.41
57028	3.251	149.647	2.5567	.9979	.56723	.13283	.001	.13311	.45
57029	1.909	148.308	1.5296	.9979	.30456	.12936	.002	.13072	.18
57030	1.909	148.606	1.5265	.9979	.36251	.12965	.002	.13077	.22
57031	1.909	149.102	1.5213	.9979	.42561	.13017	.001	.13089	.32
57032	1.909	149.514	1.5171	.9979	.49418	.13050	.001	.13089	.33
57033	.989	148.303	.7969	.9979	.30458	.12871	.003	.13008	.77
57034	.989	148.674	.7949	.9979	.36252	.12858	.003	.12965	.45
57035	.989	149.070	.7928	.9979	.42567	.12929	.002	.13004	.75
57036	.989	149.542	.7903	.9979	.49420	.12973	.002	.13010	.60

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 150.0 K W/m.K	deviation exp.-calc. percent
57037	67.238	148.553	29.6486	.8395	.80988	.23443	.001	.23573	-.07
57038	67.237	148.823	29.6183	.8394	.90293	.23495	.001	.23601	.15
57039	67.236	149.427	29.5514	.8393	1.10476	.23455	.001	.23507	-.04
57040	67.233	149.774	29.5124	.8392	1.21290	.23430	.001	.23450	-.16
57041	62.544	148.652	28.5701	.8380	.81012	.22640	.001	.22760	-.22
57042	62.547	148.884	28.5450	.8379	.90317	.22743	.001	.22842	.22
57043	62.548	149.525	28.4741	.8378	1.10540	.22700	.001	.22742	.00
57044	62.549	149.867	28.4367	.8377	1.21404	.22682	.001	.22694	-.09
57045	59.169	148.702	27.7525	.8365	.81034	.22192	.002	.22306	.28
57046	59.172	148.898	27.7314	.8364	.90318	.22151	.001	.22248	.08
57047	59.173	149.614	27.6524	.8363	1.10558	.22163	.001	.22197	.09
57048	59.174	149.904	27.6206	.8362	1.21424	.22159	.001	.22167	.06
57049	55.839	148.394	26.9450	.8352	.72241	.21537	.001	.21677	-.15
57050	55.841	148.738	26.9073	.8351	.81019	.21534	.001	.21644	-.19
57051	55.843	149.335	26.8414	.8350	1.00217	.21554	.001	.21612	-.14
57052	55.846	149.638	26.8087	.8349	1.10550	.21600	.001	.21631	.05
57053	52.246	148.551	25.9684	.8338	.72292	.20960	.001	.21085	-.03
57054	52.249	148.851	25.9363	.8337	.81086	.20995	.001	.21094	.11
57055	52.251	149.423	25.8735	.8336	1.00242	.20997	.001	.21047	.07
57056	52.253	149.733	25.8399	.8335	1.10609	.20985	0.000	.21008	-.02
57057	48.865	148.599	25.0083	.8325	.72275	.20402	.001	.20522	.04
57058	48.868	149.081	24.9557	.8324	.81092	.20415	.001	.20493	.05
57059	48.869	149.454	24.9150	.8323	1.00273	.20406	.001	.20453	-.03
57060	48.870	149.842	24.8727	.8322	1.10663	.20467	.001	.20480	.23
57061	45.353	148.400	23.9766	.8311	.64032	.19797	.001	.19932	.04
57062	45.355	148.593	23.9559	.8310	.72297	.19807	.001	.19926	.07
57063	45.357	149.270	23.8820	.8309	.90440	.19781	.001	.19843	-.14
57064	45.359	149.496	23.8580	.8308	1.00285	.19864	.001	.19907	.25
57065	41.808	148.481	22.8329	.8297	.64042	.19157	.001	.19284	-.11
57066	41.809	148.679	22.8117	.8296	.72317	.19183	.001	.19293	-.00
57067	41.811	149.382	22.7358	.8295	.90480	.19164	.001	.19216	-.20
57068	41.812	149.648	22.7075	.8294	1.00351	.19223	.001	.19252	.07
57069	38.361	148.490	21.6514	.8282	.64076	.18614	.001	.18739	.19
57070	38.362	148.821	21.6162	.8281	.72361	.18621	.001	.18719	.17
57071	38.364	149.491	21.5449	.8280	.90537	.18654	.001	.18696	.24
57072	38.365	149.776	21.5150	.8279	1.00423	.18603	.001	.18622	-.08
57073	34.820	148.301	20.3686	.8268	.56320	.17928	.001	.18067	-.13
57074	34.822	148.661	20.3314	.8267	.64104	.17959	.001	.18069	-.03
57075	34.823	149.183	20.2769	.8266	.81236	.18010	.001	.18077	.16
57076	34.824	149.602	20.2334	.8266	.90597	.17983	.001	.18016	-.07
57077	31.396	148.377	19.0027	.8255	.56343	.17375	.001	.17507	.15
57078	31.398	148.686	18.9715	.8254	.64109	.17402	.001	.17509	.23
57079	31.398	149.382	18.9006	.8253	.81284	.17405	.001	.17455	.10
57080	31.399	149.727	18.8659	.8252	.90661	.17426	.001	.17448	.15
57081	27.893	148.479	17.4904	.8242	.56365	.16716	.002	.16838	-.09
57082	27.894	148.817	17.4575	.8241	.64155	.16747	.002	.16842	.01
57083	27.896	149.505	17.3906	.8240	.81334	.16833	.001	.16873	.35
57084	27.897	149.850	17.3572	.8239	.90720	.16850	.001	.16862	.36
57085	27.889	148.606	17.4759	.7908	.56374	.16472	.001	.16583	-.88
57086	27.889	148.833	17.4535	.7908	.64183	.16522	.001	.16615	-.63
57087	27.889	149.469	17.3908	.7907	.81370	.16576	.001	.16618	-.46
57088	27.889	149.836	17.3551	.7906	.90766	.16580	.001	.16593	-.53
57089	24.286	148.124	15.8426	.7897	.49126	.15812	.001	.15960	-.91
57090	24.287	148.500	15.8076	.7896	.56419	.15850	.001	.15968	-.77
57091	24.288	149.243	15.7389	.7895	.72567	.15910	.001	.15970	-.61
57092	24.288	149.574	15.7086	.7895	.81439	.15930	.003	.15964	-.58
57093	21.442	148.284	14.3941	.7885	.49160	.15362	.002	.15496	-.61
57094	21.442	148.515	14.3739	.7884	.56433	.15355	.001	.15471	-.73
57095	21.444	149.305	14.3051	.7883	.72610	.15455	.001	.15509	-.33
57096	21.444	149.660	14.2746	.7883	.81494	.15469	.001	.15496	-.35
57097	19.315	148.368	13.2480	.7872	.49151	.15010	.001	.15137	-.48
57098	19.316	148.634	13.2261	.7871	.56429	.14998	.001	.15104	-.65
57099	19.316	149.047	13.1920	.7871	.64267	.14977	.002	.15051	-.93
57100	19.317	149.452	13.1589	.7870	.72617	.15040	.001	.15083	-.65
57101	17.231	148.450	12.0664	.7860	.49188	.14658	.001	.14778	-.40
57102	17.232	148.656	12.0506	.7859	.56474	.14646	.001	.14750	-.55
57103	17.232	149.103	12.0162	.7859	.64331	.14677	.001	.14747	-.51
57104	17.232	149.526	11.9837	.7858	.72695	.14707	.001	.14744	-.46
57105	15.026	148.615	10.7457	.7845	.49211	.14287	.001	.14394	-.35
57106	15.027	148.807	10.7326	.7844	.56498	.14288	.001	.14380	-.42
57107	15.027	149.286	10.6990	.7843	.64346	.14292	.001	.14347	-.58
57108	15.028	149.636	10.6748	.7843	.72724	.14329	.001	.14357	-.46
57109	13.084	148.552	9.5389	.7832	.49199	.13947	.001	.14058	-.34
57110	13.084	149.020	9.5096	.7832	.56532	.13961	.002	.14036	-.44
57111	13.084	149.340	9.4895	.7831	.64370	.13989	.001	.14040	-.37
57112	13.084	149.827	9.4589	.7830	.72768	.14019	.001	.14032	-.37
57113	11.011	148.337	8.1977	.7821	.42426	.13631	.001	.13758	.05
57114	11.011	148.702	8.1774	.7820	.49227	.13625	.001	.13724	-.16
57115	11.011	149.067	8.1573	.7819	.56553	.13637	.001	.13708	-.24

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 250.0 K W/m.K	deviation exp.-calc. percent
57116	11.011	149.510	8.1332	.7819	.64409	.13686	.001	.13724	-.08
57117	9.014	148.347	6.8315	.7809	.42452	.13261	.001	.13387	-.19
57118	9.014	148.871	6.8071	.7808	.49271	.13295	.001	.13381	-.19
57119	9.014	149.248	6.7896	.7807	.56599	.13277	.002	.13334	-.51
57120	9.014	149.607	6.7733	.7807	.64439	.13340	.001	.13370	-.21
57121	6.705	148.535	5.1750	.7796	.42468	.12904	.001	.13015	-.08
57122	6.705	148.931	5.1610	.7795	.49303	.12973	.001	.13054	.24
57123	6.705	149.364	5.1457	.7794	.56635	.12987	.001	.13035	.13
57124	6.705	149.849	5.1287	.7794	.64515	.13023	.001	.13034	.15
57125	4.660	148.282	3.6609	.7784	.36201	.12578	.001	.12708	.11
57126	4.660	148.675	3.6510	.7783	.42503	.12598	.001	.12698	.05
57127	4.660	149.223	3.6373	.7783	.49334	.12637	.001	.12696	.05
57128	4.660	149.558	3.6290	.7782	.56679	.12676	.001	.12710	.17
57129	2.627	148.570	2.0906	.7774	.36228	.12259	.001	.12367	-.03
57130	2.627	148.948	2.0853	.7773	.42537	.12293	.001	.12373	.02
57131	2.627	149.394	2.0789	.7772	.49364	.12329	.001	.12375	.05
57132	2.627	149.880	2.0721	.7772	.56728	.12381	.001	.12390	.19

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 250.0 K W/m.K	deviation exp.-calc. percent
53002	66.948	254.020	21.1381	.8475	.66329	.24194	.001	.24014	-.02
53003	66.949	254.732	21.0976	.8473	.90091	.24212	.001	.24000	.01
53004	66.948	255.490	21.0545	.8470	1.17540	.24207	.001	.23961	-.05
53007	63.432	254.435	20.3774	.8445	.77742	.23799	.001	.23602	-.04
53008	63.432	255.139	20.3380	.8443	1.03354	.23763	.001	.23535	-.24
53009	63.432	255.482	20.3188	.8441	1.17552	.23829	.001	.23585	.02
53011	59.925	254.014	19.6379	.8417	.66326	.23433	.002	.23256	.10
53012	59.924	254.440	19.6142	.8415	.77740	.23387	.001	.23191	-.12
53013	59.924	255.219	19.5713	.8414	1.03335	.23390	.001	.23160	-.17
53014	59.922	255.560	19.5524	.8412	1.17525	.23431	.001	.23186	-.01
53016	56.565	254.094	18.8752	.8369	.66318	.23041	.001	.22862	.04
53017	56.564	254.391	18.8590	.8367	.77741	.23050	.001	.22858	.06
53018	56.563	255.187	18.8159	.8366	1.03349	.23109	.002	.22882	.26
53019	56.562	255.607	18.7931	.8364	1.17526	.23064	.001	.22819	.03
53021	53.106	254.170	18.0607	.8339	.66316	.22636	.002	.22455	-.05
53022	53.105	254.571	18.0393	.8338	.77722	.22634	.002	.22435	-.10
53023	53.104	255.300	18.0007	.8336	1.03358	.22622	.001	.22392	-.21
53024	53.103	255.765	17.9761	.8334	1.17509	.22701	.001	.22451	.10
53026	49.500	254.142	17.1828	.8312	.66315	.22258	.002	.22079	.04
53027	49.499	254.603	17.1591	.8311	.77724	.22270	.001	.22072	.05
53028	49.498	255.378	17.1191	.8309	1.03351	.22276	.001	.22044	.01
53029	49.498	255.842	17.0954	.8307	1.17519	.22281	.001	.22029	-.01
53031	40.370	253.953	14.7905	.8281	.55775	.21236	.002	.21069	-.10
53032	40.369	254.226	14.7775	.8279	.66315	.21329	.001	.21151	.31
53033	40.368	255.091	14.7369	.8277	.90077	.21250	.001	.21035	-.16
53034	40.367	255.520	14.7167	.8276	1.03343	.21330	.001	.21097	.17
53036	36.797	253.920	13.7764	.8252	.55787	.20886	.002	.20722	.07
53037	36.796	254.291	13.7596	.8251	.66301	.20885	.001	.20705	.02
53038	36.796	255.105	13.7233	.8249	.90082	.20945	.001	.20731	.21
53039	36.795	255.606	13.7011	.8247	1.03330	.20929	.001	.20694	.07
53041	33.258	253.980	12.7215	.7510	.55728	.20329	.002	.20157	-.22
53042	33.258	254.373	12.7048	.7508	.66258	.20362	.002	.20173	-.11
53043	33.258	255.137	12.6727	.7507	.90023	.20353	.001	.20131	-.26
53044	33.257	255.621	12.6524	.7505	1.03270	.20410	.001	.20167	-.05
53046	29.812	253.751	11.6583	.7486	.55697	.19920	.002	.19759	-.42
53047	29.812	254.218	11.6399	.7484	.66188	.19927	.002	.19746	-.46
53048	29.811	255.113	11.6046	.7483	.89921	.20022	.001	.19802	-.11
53049	29.811	255.574	11.5866	.7482	1.03141	.20025	.001	.19785	-.17
53051	26.240	253.511	10.5031	.7462	.46104	.19494	.003	.19344	-.68
53052	26.240	253.825	10.4914	.7461	.55699	.19552	.002	.19388	-.43
53053	26.239	254.675	10.4603	.7459	.77636	.19596	.002	.19396	-.34
53054	26.239	255.139	10.4436	.7458	.89966	.19638	.001	.19418	-.20
53056	22.941	253.546	9.3753	.7440	.46095	.19274	.002	.19123	-.07
53057	22.940	253.845	9.3651	.7439	.55704	.19296	.002	.19132	-.01
53058	22.939	254.733	9.3355	.7438	.77621	.19240	.001	.19039	-.45
53059	22.938	255.179	9.3206	.7436	.89970	.19280	.001	.19060	-.32
53061	19.378	253.535	8.1019	.7415	.46121	.18837	.002	.18687	-.48
53062	19.376	253.943	8.0896	.7413	.55731	.18882	.002	.18715	-.31
53063	19.376	254.852	8.0629	.7411	.77669	.18906	.002	.18700	-.35
53064	19.375	255.522	8.0433	.7409	.89975	.18910	.001	.18676	-.45
53066	15.867	253.646	6.7828	.7385	.46131	.18510	.002	.18356	-.38
53067	15.866	254.014	6.7735	.7384	.55731	.18599	.002	.18430	.03
53068	15.866	254.885	6.7517	.7382	.77685	.18571	.002	.18365	-.29
53069	15.866	255.421	6.7384	.7381	.90023	.18603	.002	.18374	-.22
53071	13.129	253.707	5.7113	.7339	.46136	.18214	.002	.18058	-.53
53072	13.128	254.116	5.7024	.7337	.55726	.18278	.002	.18104	-.25
53073	13.128	254.937	5.6850	.7336	.77694	.18357	.002	.18149	.01
53074	13.128	255.520	5.6727	.7335	.90051	.18367	.001	.18134	-.05
53076	10.997	253.720	4.8504	.7317	.46135	.18037	.002	.17880	-.36
53077	10.997	254.162	4.8423	.7315	.55727	.18061	.002	.17886	-.32
53078	10.997	254.654	4.8332	.7314	.66241	.18083	.002	.17887	-.30
53079	10.996	255.113	4.8248	.7313	.77666	.18154	.001	.17939	-.00

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 250.0 K W/m.K	deviation exp.-calc. percent
53081	8.938	253.900	4.0136	.7294	.46114	.17850	.003	.17686	-.37
53082	8.937	254.291	4.0072	.7292	.55722	.17857	.002	.17676	-.41
53083	8.937	254.778	3.9998	.7290	.66240	.17921	.002	.17720	-.15
53084	8.986	255.226	3.9927	.7288	.77680	.17948	.002	.17728	-.10
53086	6.828	253.903	3.0924	.7271	.46119	.17667	.003	.17503	-.24
53087	6.828	254.294	3.0876	.7269	.55726	.17689	.002	.17509	-.20
53088	6.828	254.845	3.0810	.7268	.66227	.17694	.002	.17490	-.30
53089	6.827	255.342	3.0750	.7267	.77652	.17712	.002	.17487	-.31
53091	4.791	253.932	2.1986	.7248	.46176	.17411	.003	.17246	-.62
53092	4.790	254.385	2.1944	.7246	.55781	.17498	.002	.17314	-.22
53093	4.790	254.952	2.1896	.7244	.66315	.17504	.002	.17296	-.32
53094	4.790	255.495	2.1849	.7242	.77750	.17562	.002	.17331	-.10
53096	2.782	253.984	1.2935	.7221	.46160	.17358	.006	.17191	.15
53097	2.782	254.454	1.2909	.7220	.55769	.17301	.005	.17114	-.29
53098	2.781	254.978	1.2880	.7218	.66303	.17325	.004	.17116	-.27
53099	2.781	255.503	1.2852	.7216	.77743	.17396	.004	.17165	.02
53101	.841	253.610	.3966	.7187	.37459	.17174	.008	.17022	.25
53102	.841	254.033	.3960	.7186	.46161	.17150	.006	.16981	.01
53103	.840	254.567	.3948	.7184	.55771	.17173	.007	.16981	.01
53104	.840	255.105	.3940	.7183	.66302	.17220	.006	.17005	.16

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 250.0 K W/m.K	deviation exp.-calc. percent
53105	12.019	252.681	5.2867	.9979	.45959	.18528	.002	.18431	-.54
53106	12.019	252.985	5.2806	.9979	.55537	.18577	.002	.18469	-.32
53107	12.019	253.467	5.2711	.9979	.66012	.18549	.002	.18424	-.56
53108	12.019	253.963	5.2612	.9979	.77390	.18620	.002	.18477	-.26
53109	12.019	254.473	5.2512	.9979	.89710	.18613	.001	.18451	-.38
53110	10.479	252.774	4.6651	.9979	.45944	.18345	.003	.18245	-.76
53111	10.479	253.087	4.6485	.9979	.55512	.18407	.002	.18296	-.47
53112	10.479	253.528	4.6408	.9979	.65996	.18406	.002	.18279	-.55
53113	10.479	254.015	4.6321	.9979	.77374	.18465	.002	.18320	-.32
53114	9.030	252.700	4.0499	.9979	.45959	.18249	.003	.18152	-.52
53115	9.030	253.131	4.0433	.9979	.55517	.18302	.002	.18189	-.30
53116	9.030	253.529	4.0368	.9979	.66009	.18291	.002	.18164	-.44
53117	9.029	254.062	4.0285	.9979	.77384	.18311	.001	.18165	-.42
53118	7.516	252.672	3.4047	.9979	.45962	.18075	.003	.17979	-.70
53119	7.516	253.120	3.3987	.9979	.55518	.18127	.002	.18015	-.49
53120	7.515	253.664	3.3915	.9979	.65989	.18099	.002	.17967	-.74
53121	7.515	254.108	3.3857	.9979	.77383	.18155	.002	.18007	-.51
53122	6.123	252.758	2.7982	.9979	.45949	.17922	.003	.17823	-.85
53123	6.123	253.202	2.7934	.9979	.55505	.17955	.002	.17840	-.74
53124	6.123	253.664	2.7882	.9979	.65982	.18024	.002	.17893	-.44
53125	6.122	254.160	2.7828	.9979	.77372	.18023	.002	.17874	-.54
53126	4.689	252.851	2.1621	.9979	.45942	.17824	.002	.17722	-.67
53127	4.688	253.306	2.1581	.9979	.55499	.17831	.002	.17713	-.72
53128	4.688	253.787	2.1541	.9979	.65988	.17871	.002	.17735	-.58
53129	4.688	254.271	2.1499	.9979	.77377	.17917	.002	.17764	-.42
53130	3.308	252.879	1.5393	.9979	.45935	.17756	.004	.17653	-.34
53131	3.308	253.388	1.5362	.9979	.55501	.17755	.004	.17634	-.45
53132	3.307	253.789	1.5335	.9979	.65990	.17757	.003	.17622	-.52
53133	3.307	254.400	1.5299	.9979	.77365	.17766	.003	.17609	-.59
53135	1.979	253.010	.9286	.9979	.45936	.17699	.006	.17592	.00
53136	1.979	253.452	.9267	.9979	.55499	.17804	.005	.17681	.51
53137	1.979	254.010	.9247	.9979	.65977	.17779	.004	.17636	.26
53138	.862	252.526	.4084	.9979	.37263	.17607	.007	.17517	.16
53139	.862	252.885	.4077	.9979	.45925	.17601	.006	.17498	.06
53140	.862	253.399	.4067	.9979	.55489	.17576	.006	.17455	-.19
53141	.861	253.971	.4056	.9979	.65955	.17626	.006	.17484	-.02

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 275.0 K W/m.K	deviation exp.-calc. percent
52025	65.619	272.048	19.8873	.7425	.49750	.24126	.003	.24261	-.30
52026	65.617	272.575	19.8599	.7424	.71468	.24215	.002	.24326	.03
52027	65.617	273.340	19.8206	.7422	.97075	.24204	.001	.24280	-.08
52028	65.615	274.217	19.7755	.7420	1.26586	.24266	.001	.24302	.11
52029	62.103	272.306	19.1437	.7407	.60111	.23853	.002	.23975	.09
52030	62.103	272.663	19.1257	.7405	.71438	.23850	.002	.23956	.05
52031	62.101	273.330	19.0919	.7404	.97065	.23890	.001	.23966	.16
52032	62.101	274.242	19.0461	.7402	1.26574	.23878	.001	.23912	.03
52034	58.809	272.948	18.4042	.7387	.83759	.23488	.002	.23580	-.04
52035	58.808	273.809	18.3616	.7386	1.11297	.23493	.001	.23546	-.10
52036	58.807	274.268	18.3389	.7384	1.26559	.23528	.001	.23561	.01
52037	55.039	272.605	17.5811	.7371	.71444	.23100	.002	.23207	.01
52038	55.037	273.099	17.5571	.7369	.83722	.23132	.001	.23217	.10
52039	55.036	273.847	17.5210	.7368	1.11311	.23138	.001	.23189	.05
52040	55.036	274.315	17.4986	.7366	1.26567	.23163	.001	.23194	.12
52041	51.614	272.695	16.7846	.7353	.71427	.22755	.001	.22857	.05
52042	51.613	272.992	16.7704	.7351	.83736	.22786	.002	.22875	.15

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52043	51.512	273.921	16.7268	.7350	1.11276	.22790	.001	.22838	.07
52044	51.611	274.372	16.7058	.7348	1.26558	.22793	.001	.22821	.04
52045	48.126	272.730	15.9452	.7335	.71409	.22426	.002	.22526	.18
52046	48.125	273.137	15.9266	.7333	.83696	.22404	.001	.22486	.03
52047	48.124	273.948	15.8897	.7332	1.11248	.22464	.001	.22510	.21
52048	48.122	274.406	15.8687	.7330	1.26524	.22447	.001	.22473	.09
52049	44.583	272.690	15.0625	.7317	.71416	.22029	.001	.22130	.02
52050	44.582	273.142	15.0424	.7316	.83696	.22056	.001	.22137	.09
52051	44.580	274.061	15.0020	.7314	1.11257	.22085	.001	.22126	.12
52052	44.580	274.515	14.9823	.7313	1.26505	.22088	.001	.22109	.08
52053	41.045	272.392	14.1554	.7299	.60071	.21635	.002	.21748	-.11
52054	41.044	272.751	14.1400	.7298	.71397	.21680	.002	.21777	.06
52055	41.042	273.616	14.1035	.7297	.96972	.21736	.001	.21796	.21
52056	41.041	274.051	14.0851	.7295	1.11255	.21724	.001	.21765	.10
52057	37.572	272.435	13.2131	.7282	.60072	.21342	.002	.21452	.14
52058	37.571	272.731	13.2009	.7280	.71406	.21344	.002	.21442	.12
52059	37.570	273.664	13.1636	.7279	.96982	.21390	.001	.21447	.21
52060	37.569	274.132	13.1448	.7278	1.11246	.21401	.001	.21438	.20
52061	33.985	272.606	12.1940	.7264	.60049	.20903	.002	.21005	-.27
52062	33.984	272.856	12.1838	.7263	.71397	.20960	.002	.21051	-.04
52063	33.983	273.823	12.1477	.7261	.96968	.20990	.001	.21040	-.03
52064	33.983	274.217	12.1328	.7260	1.11255	.21036	.001	.21069	.13
52065	30.464	272.508	11.1601	.7246	.60087	.20602	.002	.20708	-.05
52066	30.463	273.015	11.1421	.7245	.71420	.20644	.002	.20728	.08
52067	30.463	273.988	11.1078	.7244	.97000	.20629	.001	.20672	-.14
52068	30.462	274.360	11.0946	.7242	1.11332	.20702	.001	.20729	.16
52069	27.070	272.635	10.1129	.7230	.60099	.20235	.003	.20335	-.26
52070	27.070	273.006	10.1007	.7228	.71425	.20324	.002	.20408	.12
52071	27.068	273.951	10.0697	.7227	.97040	.20311	.001	.20355	-.09
52072	27.067	274.414	10.0544	.7225	1.11349	.20375	.001	.20400	.15
52073	23.529	272.677	8.9761	.7212	.60109	.20002	.002	.20100	.25
52074	23.528	273.105	8.9631	.7211	.71425	.19960	.002	.20040	-.03
52075	23.527	274.059	8.9349	.7210	.97037	.19994	.002	.20034	-.02
52076	23.527	274.627	8.9181	.7208	1.11294	.20031	.001	.20047	.07
52077	19.963	272.318	7.7901	.7195	.49753	.19608	.003	.19720	.02
52078	19.963	272.725	7.7792	.7194	.60094	.19637	.002	.19732	.10
52079	19.962	273.620	7.7558	.7192	.83737	.19637	.002	.19695	-.06
52080	19.960	274.175	7.7409	.7191	.97027	.19664	.001	.19699	-.02
52081	16.435	272.438	6.5496	.7177	.49747	.19283	.003	.19390	.01
52082	16.435	272.804	6.5412	.7176	.60093	.19286	.002	.19378	-.05
52083	16.434	273.801	6.5188	.7175	.83755	.19370	.002	.19420	.20
52084	16.434	274.273	6.5083	.7174	.97039	.19391	.001	.19421	.22
52085	13.093	272.528	5.3238	.7161	.49757	.19012	.002	.19115	.16
52086	13.092	272.973	5.3153	.7160	.60087	.19017	.002	.19101	.10
52087	13.091	273.858	5.2987	.7158	.83755	.19032	.002	.19079	.01
52088	13.090	274.498	5.2867	.7157	.97050	.19074	.002	.19095	.11

Run Pt.	Pressure MPa	Temperature K	Density mol/L	para fraction	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adj. Thermal Conductivity Nom. Temperature 275.0 K W/m.K	deviation exp.-calc. percent
52001	12.400	272.024	5.0724	.9979	.49695	.19311	.002	.19419	.18
52002	12.398	272.454	5.0642	.9979	.59991	.19167	.002	.19259	-.64
52003	12.398	272.968	5.0551	.9979	.71325	.19341	.002	.19415	.18
52004	12.398	273.473	5.0462	.9979	.83616	.19325	.002	.19380	.01
52005	10.365	272.095	4.2925	.9979	.49652	.19059	.003	.19164	-.20
52006	10.365	272.535	4.2857	.9979	.59982	.19059	.003	.19148	-.28
52007	10.365	273.025	4.2784	.9979	.71285	.19115	.002	.19186	-.07
52008	10.365	273.520	4.2709	.9979	.83565	.19121	.002	.19175	-.12
52009	8.093	272.134	3.3986	.9979	.49638	.18855	.003	.18958	-.23
52010	8.092	272.602	3.3928	.9979	.59954	.18882	.003	.18969	-.17
52011	8.092	273.057	3.3872	.9979	.71305	.18825	.002	.18895	-.56
52012	8.092	273.589	3.3807	.9979	.83615	.18918	.002	.18969	-.16
52013	6.030	272.139	2.5650	.9979	.49698	.18696	.002	.18799	-.13
52014	6.030	272.603	2.5608	.9979	.60034	.18675	.002	.18761	-.32
52015	6.029	273.153	2.5554	.9979	.71346	.18714	.002	.18781	-.21
52016	6.029	273.685	2.5506	.9979	.83655	.18724	.002	.18771	-.26
52017	3.888	272.391	1.6750	.9979	.49698	.18496	.003	.18590	-.26
52018	3.888	272.939	1.6715	.9979	.60031	.18555	.002	.18629	-.04
52019	3.888	273.455	1.6684	.9979	.71361	.18581	.002	.18637	.00
52020	3.898	274.059	1.6646	.9979	.83650	.18596	.002	.18630	-.03
52021	1.836	272.003	.8023	.9979	.40317	.18304	.004	.18412	-.27
52022	1.836	272.426	.8009	.9979	.49653	.18314	.004	.18406	-.30
52023	1.836	272.781	.7999	.9979	.60008	.18338	.004	.18418	-.23
52024	1.836	273.399	.7981	.9979	.71265	.18396	.003	.18453	-.04

3. Methane Results

A total of 900 points are given in Table 3. The results are reported in [9]. The computer programs developed for the thermal conductivity surface of methane are shown below. The equation of state used for methane is given in [8].

```
        FUNCTION CH4TC(RHO,T)
        DIMENSION A(4),B(9)
C       COEF FROM TCO21 AND MINIMS, 31 MAR 84 2ND PASS
        DATA A/-.8863333440E-02
     1  , .2419639784E-03 ,-.6997019196E-06 , .1224609018E-08/
        DATA B/
     1    .2773027550E-02 ,-.2477683184E-05 ,-.1458682198E+02
     1  ,-.1982760371E-01 , .1009665010E-03 ,-.2595460306E-07
     1  , .3691505315E+01 , .6857505926E-02 ,-.3009401784E-04/
        TERM1=A(1)+A(2)*T+A(3)*T**2+A(4)*T**3
        TERM2=(B(1)+B(2)*T)*RHO
        BEE=EXP(B(3)+B(4)*T+B(5)*T**2+B(6)*T**3)
        ENN=B(7)+B(8)*T+B(9)*T**2
        TERM3=BEE*RHO**ENN
        CH4TC=TERM1+TERM2+TERM3+CH4CRIT(RHO,T)
        RETURN
        END


        FUNCTION CH4CRIT(RHO,TEMP)
        DIMENSION C(6)
C       COEF FROM TCO21 AND MINIMS, 31 MAR 84 2ND PASS
        DATA C/ .2054937228E+00
     1  ,-.1850000000E+03 , .9517540680E-02 ,-.2944481220E-04
     1  ,-.2244399588E+00 , .1720710404E+00 /
        DATA (TC=190.555),(RHOC=10.0)
        T=TEMP
        DEN=RHO
        IF(T.LT.TC) T=TC+(TC-T)
        IF(T.LT.377.991) GO TO 4
        CH4CRIT=0.
        RETURN
      4 CONTINUE
        AMPL=C(1)/(T+C(2))+C(3)+C(4)*T
        DELRHO=DEN-RHOC
        X1=C(5)*DELRHO
        IF(DEN.GT.10.0) X1=C(6)*DELRHO
        CH4CRIT=AMPL*EXP(-X1**2)
        RETURN
        END
```

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Table 3. The Thermal Conductivity of Methane

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 110 K W/m.K	Conductivity deviation from correlation percent
70028	.561	111.827	26.3519	.99832	.18427	0.000	.18371	-.50
70027	.556	111.655	26.3671	.91576	.18476	0.000	.18425	-.36
70026	.551	111.255	26.4032	.83558	.18475	.001	.18436	-.68
70025	.546	110.983	26.4275	.75983	.18512	.001	.18482	-.69
70024	11.644	111.762	26.9517	.99738	.19681	.001	.19623	-.14
70023	11.641	111.363	26.9838	.91369	.19679	.001	.19634	-.42
70022	11.635	111.215	26.9955	.83522	.19754	.001	.19714	-.13
70021	11.630	110.985	27.0138	.75969	.19758	.001	.19725	-.26
70020	22.698	111.768	27.4612	1.08182	.20704	.001	.20643	-.36
70019	22.693	111.688	27.4569	.99618	.20762	0.000	.20703	-.12
70018	22.688	111.301	27.4951	.91297	.20775	0.000	.20730	-.29
70017	22.682	111.173	27.5043	.83448	.20846	0.000	.20805	-.02
70016	34.119	111.613	27.9245	1.08073	.21681	0.000	.21622	-.52
70015	34.117	111.472	27.9339	.99554	.21779	0.000	.21725	-.14
70014	34.112	111.231	27.9499	.91203	.21761	.001	.21716	-.35
70013	34.109	110.997	27.9655	.83355	.21796	0.000	.21759	-.31
70012	44.939	111.508	28.2995	1.07935	.22569	0.000	.22511	-.36
70011	44.932	111.347	28.3092	.99349	.22602	0.000	.22550	-.29
70010	44.926	111.101	28.3243	.91114	.22624	0.000	.22582	-.30
70009	44.920	110.863	28.3387	.83233	.22667	.001	.22634	-.22
70008	56.744	111.433	28.6493	1.07906	.23494	.001	.23437	.07
70007	56.740	111.181	28.6635	.99259	.23517	.001	.23470	.06
70006	56.735	110.963	28.6757	.91048	.23542	.001	.23503	.08
70005	56.726	110.745	28.6879	.83168	.23554	.001	.23524	.04
70004	68.635	111.218	28.9598	1.07687	.24325	.001	.24275	.38
70003	68.639	111.104	28.9658	.99131	.24368	.001	.24322	.52
70002	68.647	110.894	28.9771	.90959	.24381	.001	.24344	.49
70001	68.659	110.631	28.9911	.83064	.24405	.001	.24379	.49

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 135 K W/m.K	Conductivity deviation from correlation percent
73028	.316	134.645	.3021	.05668	.01483	.003	.01487	.16
73027	.316	134.119	.3035	.04600	.01475	.005	.01486	.02
73026	.315	133.606	.3038	.03644	.01475	.007	.01492	.43
73025	.314	133.127	.3048	.02801	.01471	.009	.01494	.54
69028	.778	135.369	24.0430	.88406	.15136	.001	.15128	.28
69027	.772	135.054	24.0767	.79706	.15181	.001	.15180	.27
69026	.761	134.663	24.1181	.71438	.15203	.001	.15210	.04
69025	.745	134.383	24.1468	.63671	.15245	.001	.15258	.06
69024	11.718	135.395	24.9494	.97511	.16643	.001	.16634	.35
69023	11.715	135.072	24.9780	.88321	.16687	.001	.16685	.36
69022	11.709	134.724	25.0086	.79593	.16708	.001	.16715	.22
69021	11.694	134.433	25.0335	.71378	.16755	.001	.16768	.28
69020	22.964	135.255	25.6876	.97428	.17951	.001	.17945	.25
69019	22.963	134.855	25.7189	.88273	.18009	.001	.18013	.30
69018	22.961	134.595	25.7390	.79537	.17996	.001	.18006	.06
69017	22.959	134.300	25.7620	.71306	.18038	.001	.18056	.09
69016	34.181	135.304	26.2824	1.06951	.19082	.001	.19074	.16
69015	34.180	134.983	26.3051	.97323	.19106	.001	.19106	.09
69014	34.177	134.717	26.3239	.88175	.19153	.001	.19161	.18
69013	34.172	134.482	26.3403	.79479	.19175	.001	.19189	.16
69012	45.585	135.055	26.8156	1.06806	.20144	0.000	.20142	.07
69011	45.577	134.801	26.8319	.97227	.20170	.001	.20176	.06
69010	45.574	134.607	25.8440	.88134	.20224	.001	.20235	.22
69009	45.564	134.390	26.8581	.79411	.20225	.001	.20242	.12
69008	56.761	135.242	27.2397	1.15753	.21085	.001	.21078	.20
69007	56.753	134.920	27.2590	1.06714	.21114	0.000	.21116	.18
69006	56.743	134.722	27.2706	.97144	.21186	0.000	.21194	.43
69005	56.735	134.408	27.2894	.88007	.21176	.001	.21193	.23
69004	67.925	135.053	27.6305	1.16634	.21996	0.000	.21994	.40
69003	67.926	134.764	27.6468	1.06592	.22006	0.000	.22013	.32
69002	67.926	134.496	27.6620	.97010	.22036	.001	.22051	.33
69001	67.928	134.259	27.6754	.87933	.22067	0.000	.22089	.37

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 145 K W/m.K	Conductivity deviation from correlation percent
73024	.357	145.151	.3142	.07480	.01597	.003	.01595	-.68
73023	.357	144.549	.3158	.06186	.01590	.005	.01595	-.70
73022	.357	144.034	.3171	.05020	.01584	.008	.01595	-.72
73021	.357	143.587	.3183	.03980	.01584	.010	.01600	-.41

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 155 K W/m.K	deviation from correlation percent
73020	.650	144.746	.6117	.07462	.01658	.005	.01661	-1.13
73019	.650	144.258	.6147	.06176	.01659	.003	.01668	-.77
73018	.650	143.690	.6182	.05011	.01660	.005	.01675	-.37
73017	.650	143.403	.6200	.03975	.01652	.006	.01671	-.67

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 155 K W/m.K	deviation from correlation percent
73011	.429	154.710	.3547	.06710	.01708	.003	.01711	-1.16
73010	.429	154.129	.3563	.05448	.01717	.006	.01727	-.26
73009	.429	153.687	.3575	.04320	.01697	.006	.01712	-1.16
73012	.429	153.161	.3587	.03323	.01691	.009	.01712	-1.17
73008	.731	155.000	.6342	.08101	.01781	.003	.01781	-1.07
73007	.731	154.460	.6373	.06703	.01773	.004	.01779	-1.22
73006	.731	153.983	.6401	.05444	.01771	.006	.01783	-1.07
73005	.731	153.493	.6429	.04317	.01762	.007	.01779	-1.30
73004	1.082	154.611	1.0133	.08091	.01876	.003	.01880	-.76
73003	1.082	154.165	1.0184	.06699	.01866	.004	.01875	-1.09
73002	1.082	153.622	1.0252	.05438	.01864	.004	.01880	-.96
73001	1.082	153.277	1.0293	.04313	.01852	.008	.01872	-1.45
74032	1.600	155.515	21.6615	.75753	.12179	.001	.12170	.12
74031	1.599	155.080	21.7236	.67042	.12260	.001	.12259	.22
74030	1.598	154.711	21.7755	.58883	.12306	.001	.12311	.12
74029	1.595	154.339	21.8274	.51264	.12344	0.000	.12355	-.04
74027	6.757	155.315	22.4861	.75677	.13193	0.000	.13187	-.19
74026	6.755	154.878	22.5359	.66974	.13263	.001	.13265	-.11
74025	6.754	154.565	22.5715	.58861	.13294	.001	.13302	-.19
74028	6.757	154.223	22.6107	.51217	.13318	.001	.13332	-.37
74023	14.577	155.484	23.3434	.84885	.14399	0.000	.14390	-.22
74022	14.576	155.132	23.3765	.75654	.14444	0.000	.14442	-.20
74021	14.575	154.797	23.4079	.66996	.14487	.001	.14491	-.18
74024	14.579	154.491	23.4370	.58816	.14520	.001	.14530	-.22
74019	25.316	155.595	24.2304	.94554	.15793	.001	.15781	-.12
74018	25.314	155.239	24.2588	.84799	.15829	.001	.15824	-.14
74017	25.310	154.966	24.2803	.75577	.15867	.001	.15868	-.09
74020	25.318	154.586	24.3112	.66902	.15889	.001	.15897	-.22
74016	36.001	155.724	24.9255	1.04788	.16952	0.000	.16937	-.23
74015	36.001	155.402	24.9485	.94469	.16996	0.000	.16988	-.17
74014	35.997	154.976	24.9786	.84668	.17056	.001	.17056	-.08
74013	35.978	154.755	24.9933	.75506	.17093	.001	.17098	.01
74012	46.637	155.563	25.5217	1.04740	.18080	.001	.18068	.07
74011	46.631	155.228	25.5433	.94403	.18094	.001	.18089	-.04
74010	46.626	154.890	25.5652	.84655	.18148	.001	.18150	.07
74009	46.626	154.570	25.5861	.75482	.18185	.001	.18194	.10
74008	56.930	155.419	26.0179	1.04587	.19060	.001	.19051	.23
74007	56.927	154.980	26.0444	.94299	.19079	.001	.19079	.10
74006	56.921	154.681	26.0624	.84574	.19118	.001	.19125	.16
74005	56.919	154.420	26.0781	.75425	.19154	.001	.19167	.21
74004	67.027	155.151	26.4526	1.04480	.19946	.001	.19943	.31
74003	67.028	154.884	26.4679	.94232	.19942	.001	.19945	.16
74002	67.035	154.564	26.4865	.84507	.20013	.001	.20023	.36
74001	67.043	154.234	26.5056	.75325	.20037	.001	.20055	.32

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 165 K W/m.K	deviation from correlation percent
72028	.446	165.249	.3418	.08726	.01821	.002	.01818	-1.25
72027	.446	164.627	.3436	.07221	.01811	.003	.01815	-1.44
72026	.446	164.008	.3451	.05865	.01807	.004	.01818	-1.30
72025	.446	163.654	.3460	.04651	.01803	.005	.01818	-1.31
72024	.935	164.789	.7705	.08715	.01912	.002	.01914	-1.69
72023	.935	164.336	.7739	.07215	.01912	.003	.01919	-1.47
72022	.935	163.737	.7780	.05859	.01903	.004	.01917	-1.64
72021	.935	163.372	.7805	.04646	.01891	.006	.01909	-2.09
72020	1.657	164.151	1.5796	.08695	.02141	.003	.02151	-.07
72019	1.657	163.770	1.5879	.07200	.02144	.004	.02158	.17
72018	1.657	163.435	1.5954	.05850	.02147	.005	.02165	.39
72017	1.657	163.111	1.6032	.04640	.02141	.008	.02163	.19

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 175 K W/m.K	deviation from correlation percent
72016	.406	175.467	.2899	.09352	.01922	.003	.01917	-1.25
72015	.406	174.780	.2911	.07739	.01909	.003	.01911	-1.55
72014	.406	174.244	.2921	.06287	.01911	.004	.01920	-1.13
72013	.406	173.672	.2932	.04986	.01908	.006	.01923	-.96
72012	1.015	174.946	.7777	.09332	.02029	.003	.02030	-1.58
72011	1.015	174.370	.7812	.07730	.02015	.004	.02022	-1.99
72010	1.015	173.887	.7846	.06280	.02015	.005	.02028	-1.76

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature W/m.K	deviation from correlation percent
72009	1.015	173.424	.7875	.04981	.02010	.007	.02028	-1.78
72008	1.751	174.393	1.5010	.09314	.02207	.003	.02214	-1.50
72007	1.751	173.984	1.5075	.07713	.02203	.004	.02215	-1.54
72006	1.751	173.504	1.5156	.06268	.02216	.005	.02234	-.79
72005	1.752	173.135	1.5227	.04975	.02194	.008	.02216	-1.68
72004	2.459	173.762	2.4825	.09304	.02567	.003	.02583	2.45
72003	2.460	173.415	2.5012	.07706	.02579	.005	.02600	2.86
72002	2.461	173.064	2.5206	.06264	.02585	.007	.02610	3.04
72001	2.462	172.766	2.5379	.04973	.02528	.013	.02557	.82
67043	2.648	175.359	18.2186	.59371	.09304	.001	.09297	2.26
67042	2.648	174.924	18.3394	.51177	.09383	.001	.09384	2.19
67041	2.547	174.506	18.4513	.43594	.09495	.001	.09505	2.52
67044	2.649	173.979	18.5893	.36649	.09518	.002	.09537	1.70
67039	4.616	175.226	19.1810	.59337	.09977	.001	.09973	1.00
67038	4.616	174.785	19.2656	.51143	.10043	.001	.10047	.98
67037	4.615	174.407	19.3373	.43593	.10107	.001	.10117	1.04
67040	4.616	174.021	19.4102	.36631	.10129	.002	.10146	.66
67035	12.710	175.360	21.0598	.68097	.11736	.001	.11730	-.37
67034	12.708	175.020	21.0983	.59287	.11769	.001	.11769	-.42
67033	12.705	174.534	21.1522	.51103	.11818	.001	.11826	-.47
67036	12.712	174.088	21.2049	.43563	.11862	.002	.11877	-.54
67031	19.724	175.653	21.9938	.77379	.12832	.001	.12821	-.66
67030	19.722	175.178	22.0380	.67968	.12901	.001	.12898	-.50
67029	19.720	174.793	22.0703	.59215	.12957	.001	.12960	-.38
67032	19.724	174.357	22.1148	.51049	.12980	.002	.12991	-.55
67028	26.457	175.719	22.6933	.87385	.13772	.001	.13760	-.58
67027	26.455	175.380	22.7210	.77339	.13811	.001	.13805	-.54
67026	26.450	174.924	22.7580	.67937	.13861	.001	.13862	-.49
67025	26.446	174.570	22.7867	.59182	.13879	.001	.13886	-.61
67024	33.801	175.558	23.3340	.87331	.14701	.001	.14692	-.49
67023	33.796	175.163	23.3629	.77308	.14743	.001	.14740	-.46
67022	33.792	174.813	23.3886	.67929	.14773	.001	.14776	-.47
67021	33.794	174.483	23.4131	.59172	.14827	.001	.14836	-.32
67020	41.291	175.820	23.8580	.97911	.15522	.001	.15508	-.40
67019	41.288	175.338	23.8907	.87291	.15573	.001	.15567	-.35
67018	41.285	175.061	23.9094	.77301	.15608	.001	.15607	-.29
67017	41.276	174.654	23.9367	.67921	.15653	.001	.15659	-.23
67016	48.148	175.705	24.3009	.97839	.16260	0.000	.16248	-.24
67015	48.149	175.305	24.3266	.87240	.16291	.001	.16286	-.27
67014	48.142	174.788	24.3593	.77253	.16332	.001	.16336	-.30
67013	48.145	174.596	24.3718	.67878	.16348	.001	.16355	-.31
67012	55.061	175.547	24.7033	.97742	.16959	.001	.16950	-.12
67011	55.062	175.051	24.7335	.87138	.16993	.001	.16992	-.17
67010	55.058	174.704	24.7543	.77194	.17064	.001	.17069	.07
67009	55.051	174.439	24.7700	.67827	.17091	.001	.17101	.09
67007	61.637	175.386	25.0515	.97739	.17583	0.000	.17576	-.04
67006	61.642	175.017	25.0731	.87147	.17636	.001	.17636	.08
67005	61.637	174.659	25.0936	.77164	.17657	.001	.17663	.02
67008	61.641	174.273	25.1162	.67816	.17702	.001	.17715	.09
67004	68.363	175.485	25.3635	1.08890	.18195	0.000	.18186	.19
67003	68.360	175.204	25.3790	.97707	.18224	.001	.18220	.22
67002	68.375	174.804	25.4018	.87098	.18235	0.000	.18238	.08
67001	68.379	174.506	25.4185	.77133	.18264	.001	.18273	.10

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 185 K W/m.K	deviation from correlation percent
71020	.752	185.421	.5200	.08289	.02072	.003	.02067	-2.34
71019	.752	184.903	.5218	.06734	.02077	.003	.02078	-1.79
71018	.752	184.371	.5236	.05343	.02079	.004	.02087	-1.40
71017	.752	183.963	.5256	.04113	.02011	.006	.02024	-4.57
71016	1.507	185.602	1.1246	.09995	.02216	.002	.02208	-2.97
71015	1.508	185.087	1.1296	.08280	.02209	.002	.02208	-3.02
71014	1.508	184.516	1.1350	.06728	.02206	.003	.02213	-2.86
71013	1.508	184.171	1.1385	.05340	.02151	.004	.02162	-5.30
71012	2.252	185.078	1.8568	.09978	.02416	.002	.02415	-2.69
71011	2.251	184.541	1.8676	.08267	.02397	.003	.02404	-3.26
71010	2.252	184.292	1.8732	.06718	.02374	.004	.02385	-4.15
71009	2.252	183.844	1.8827	.05334	.02407	.005	.02425	-2.55
71008	2.884	184.688	2.6675	.09972	.02694	.002	.02701	-1.38
71007	2.884	184.300	2.6844	.08261	.02699	.002	.02714	-1.10
71006	2.884	183.919	2.7014	.06714	.02692	.004	.02715	-1.29
71005	2.895	183.674	2.7130	.05331	.02723	.007	.02750	-.11
71024	3.449	184.243	3.7462	.09967	.03246	.003	.03270	3.57
71023	3.449	183.964	3.7775	.08262	.03251	.003	.03284	3.56
71022	3.450	183.733	3.8053	.06717	.03364	.006	.03405	6.62
71021	3.450	183.486	3.8352	.05334	.03404	.005	.03452	7.53

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 197 K W/m.K	deviation from correlation percent
66105	1.013	200.259	.6521	.10870	.02272	.002	.02242	-1.52
66104	1.013	199.676	.6545	.09004	.02271	.002	.02246	-1.34
66103	1.013	199.006	.6574	.07318	.02269	.003	.02251	-1.18
66102	1.014	199.033	.6576	.07318	.02260	.005	.02241	-1.60
66101	1.014	198.544	.6596	.05806	.02258	.005	.02244	-1.50
66099	1.531	199.330	1.0328	.09005	.02344	.003	.02324	-2.12
66098	1.531	198.735	1.0371	.07319	.02344	.005	.02329	-1.94
66097	1.532	199.347	1.0405	.05809	.02324	.006	.02313	-2.71
66100	1.531	198.016	1.0421	.04472	.02290	.009	.02282	-4.13
66095	2.669	199.379	2.0020	.10857	.02582	.003	.02569	-2.86
66094	2.670	198.893	2.0117	.08996	.02592	.005	.02582	-2.45
66093	2.671	198.471	2.0210	.07311	.02586	.004	.02578	-2.69
66096	2.669	198.055	2.0272	.05804	.02589	.007	.02584	-2.55
66091	3.520	198.901	2.9427	.10837	.02876	.003	.02876	-2.42
66090	3.520	198.535	2.9573	.08981	.02894	.004	.02895	-1.94
66089	3.520	198.178	2.9718	.07303	.02884	.006	.02885	-2.46
66092	3.519	197.847	2.9850	.05795	.02874	.007	.02875	-2.97
66087	4.156	198.920	3.8460	.12859	.03241	.003	.03258	-1.19
66086	4.156	198.545	3.8737	.10828	.03246	.004	.03261	-1.46
66085	4.156	198.129	3.9052	.08978	.03235	.006	.03247	-2.31
66088	4.156	197.856	3.9265	.07300	.03271	.007	.03281	-1.54
66083	4.568	198.576	4.6497	.12856	.03611	.003	.03644	-.76
66082	4.568	198.243	4.6911	.10825	.03640	.005	.03667	-.67
66081	4.569	197.957	4.7297	.08973	.03666	.007	.03688	-.64
66084	4.568	197.623	4.7720	.07297	.03688	.008	.03704	-.82
66080	4.860	198.546	5.3693	.15048	.04013	.003	.04066	.11
66079	4.860	198.321	5.4130	.12849	.04052	.004	.04099	.30
66078	4.861	197.947	5.4901	.10820	.04067	.005	.04104	-.69
66077	4.861	197.737	5.5374	.08967	.04065	.006	.04095	-1.58
66076	5.049	198.059	6.0930	.12831	.04489	.007	.04545	.95
66075	5.049	197.769	6.1833	.10808	.04498	.005	.04541	-.40
66074	5.049	197.600	6.2390	.08961	.04524	.006	.04559	-.79
66073	5.049	197.361	6.3237	.07290	.04518	.010	.04540	-2.41
66072	5.172	197.928	6.6566	.12830	.04844	.004	.04907	.78
66071	5.172	197.711	6.7500	.10812	.04906	.005	.04957	.53
66070	5.172	197.542	6.8278	.08966	.04972	.008	.05012	.60
66069	5.172	197.323	6.9353	.07291	.04996	.010	.05021	-.65
66068	5.229	197.897	6.9547	.12830	.05060	.004	.05128	1.18
66067	5.229	197.733	7.0374	.10811	.05105	.006	.05163	.78
66066	5.230	197.549	7.1380	.08967	.05194	.008	.05239	.95
66065	5.229	197.367	7.2409	.07292	.05249	.011	.05281	.43
66063	5.328	197.769	7.6037	.12833	.05377	.004	.05448	-.92
66062	5.328	197.637	7.6956	.10809	.05438	.005	.05499	-1.08
66061	5.329	197.424	7.8603	.08963	.05510	.006	.05553	-2.01
66064	5.328	197.318	7.9374	.07289	.05535	.010	.05568	-2.62
66059	5.407	197.894	8.0502	.15027	.05720	.003	.05812	.45
66058	5.408	197.711	8.2045	.12831	.05796	.003	.05872	-.15
66057	5.408	197.560	8.3377	.10812	.05854	.005	.05916	-.77
66060	5.407	197.396	8.4911	.08963	.05971	.007	.06017	-.59
66055	5.500	198.115	8.5425	.19936	.06127	.004	.06250	2.69
66054	5.500	197.914	8.7342	.17396	.06186	.004	.06291	1.62
66053	5.500	197.829	8.8188	.15027	.06256	.004	.06353	1.85
66056	5.499	197.597	9.0554	.12829	.06301	.004	.06374	.25
66052	5.692	198.226	9.9294	.22642	.06875	.004	.07025	4.15
66051	5.692	198.053	10.1199	.19930	.06921	.003	.07052	3.60
66050	5.692	197.882	10.3134	.17384	.06919	.005	.07030	2.42
66049	5.693	197.678	10.5520	.15021	.07018	.004	.07104	2.42
66048	5.965	198.474	11.4627	.25546	.07159	.002	.07324	2.17
66047	5.966	198.275	11.6526	.22652	.07175	.003	.07317	1.51
66046	5.966	198.070	11.8428	.19934	.07203	.003	.07321	1.03
66045	5.967	197.904	12.0007	.17397	.07253	.004	.07352	1.02
66043	6.571	198.471	13.6041	.25559	.07406	.004	.07520	-.75
66042	6.571	198.290	13.7018	.22661	.07372	.003	.07471	-1.67
66041	6.572	198.023	13.8421	.19942	.07424	.003	.07501	-1.63
66044	6.571	197.943	13.8813	.17398	.07435	.004	.07506	-1.68
66040	7.445	198.650	14.9564	.28629	.07703	.002	.07786	-1.39
66039	7.446	198.306	15.0761	.22651	.07759	.003	.07824	-1.34
66038	7.447	197.917	15.2077	.17375	.07758	.005	.07803	-2.13
66037	7.447	197.672	15.2885	.12817	.07822	.007	.07854	-1.78
66036	8.899	198.998	16.1642	.35314	.08202	.002	.08258	-.74
66035	8.899	198.586	16.2628	.28635	.08243	.003	.08287	-.90
66034	8.900	198.134	16.3691	.22666	.08295	.003	.08326	-1.00
66033	8.900	197.859	16.4329	.17394	.08331	.005	.08355	-1.00
66032	11.180	199.382	17.3129	.42637	.08843	.001	.08872	-.28
66031	11.180	198.850	17.4059	.35272	.08894	.003	.08916	-.40
66030	11.180	198.640	17.4426	.28598	.08921	.003	.08940	-.37
66029	11.180	198.159	17.5256	.22649	.08973	.003	.08987	-.41
66027	14.451	199.233	18.4565	.42651	.09632	.001	.09635	-.25
66026	14.449	198.829	18.5106	.35280	.09669	.001	.09671	-.30

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 215 K W/m.K	deviation from correlation percent
66025	14.449	198.513	18.5530	.28617	.09701	.002	.09703	-.30
66028	14.452	197.985	18.6247	.22656	.09736	.003	.09737	-.52
66024	19.223	199.647	19.5067	.50675	.10559	.002	.10544	.13
66023	19.221	199.171	19.5579	.42611	.10573	.002	.10561	-.16
66022	19.217	198.766	19.6010	.35261	.10577	.006	.10567	-.47
66021	19.214	198.521	19.6269	.28592	.10675	.003	.10666	.24
66020	26.073	200.860	20.5018	.69178	.11455	.001	.11416	-.80
66019	26.073	200.358	20.5462	.59659	.11503	.001	.11469	-.75
66018	26.070	199.942	20.5827	.50844	.11546	.001	.11517	-.67
66017	26.067	199.516	20.6201	.42762	.11552	.002	.11527	-.93
66016	35.267	201.141	21.5630	.79422	.12669	.001	.12618	-.75
66015	35.265	200.642	21.6000	.69191	.12733	.001	.12688	-.55
66014	35.263	200.211	21.6319	.59665	.12763	.001	.12724	-.58
66013	35.263	199.725	21.6680	.50861	.12779	.002	.12746	-.75
66012	47.247	200.885	22.6301	.79406	.14078	.001	.14027	-.51
66011	47.244	200.367	22.6629	.69175	.14141	.001	.14097	-.33
6601C	47.240	199.989	22.6868	.59658	.14138	.001	.14098	-.55
65009	47.238	199.680	22.7063	.50871	.14174	.002	.14139	-.46
66008	62.619	201.164	23.6417	.90315	.15625	.001	.15570	-.04
66007	62.619	200.687	23.6683	.79401	.15668	.001	.15619	.01
66006	62.620	200.378	23.6855	.69177	.15687	.001	.15642	-.01
66005	62.621	200.002	23.7065	.59670	.15719	.001	.15679	.02
66004	69.413	201.156	24.0248	.90254	.16311	.001	.16256	.47
66003	69.417	200.706	24.0488	.79352	.16328	.001	.16279	.38
66002	69.421	200.328	24.0690	.69139	.16356	.001	.16312	.38
66001	69.426	200.030	24.0850	.59653	.16391	.002	.16351	.46

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 215 K W/m.K	deviation from correlation percent
65104	1.068	215.053	.6330	.09777	.02440	.003	.02439	-.53
65103	1.068	214.489	.6350	.07948	.02427	.004	.02432	-.84
65102	1.068	213.947	.6369	.06308	.02432	.005	.02443	-.42
65101	1.068	213.426	.6388	.04859	.02411	.008	.02428	-1.08
65100	1.747	215.328	1.0771	.11797	.02539	.003	.02536	-.89
65099	1.747	214.790	1.0808	.09775	.02534	.003	.02536	-.90
65098	1.747	214.260	1.0844	.07948	.02527	.004	.02535	-1.00
65097	1.748	213.806	1.0880	.06309	.02512	.006	.02524	-1.44
65096	3.035	214.864	2.0509	.11789	.02764	.003	.02765	-1.27
65095	3.036	214.326	2.0606	.09770	.02749	.004	.02755	-1.73
65094	3.036	213.846	2.0694	.07942	.02786	.011	.02797	-.30
65093	3.038	213.566	2.0751	.06307	.02761	.007	.02775	-1.16
65092	4.165	214.431	3.1047	.11779	.03069	.003	.03074	-.52
65091	4.165	214.021	3.1187	.09764	.03068	.004	.03076	-.58
65090	4.165	213.625	3.1328	.07939	.03067	.005	.03078	-.65
65089	4.165	213.296	3.1444	.06304	.03069	.008	.03082	-.61
65088	5.021	215.344	4.0275	.18965	.03384	.002	.03382	.13
65087	5.021	214.428	4.0802	.13982	.03398	.003	.03401	.18
65086	5.021	213.774	4.1194	.09759	.03421	.005	.03428	.56
65085	5.021	213.072	4.1625	.06304	.03439	.008	.03449	.75
65083	5.810	214.675	5.1724	.18951	.03844	.002	.03845	1.32
65082	5.811	214.439	5.1974	.16361	.03821	.003	.03822	.47
65081	5.813	214.014	5.2426	.13970	.03806	.003	.03808	-.38
65084	5.810	213.567	5.2840	.11768	.03916	.004	.03918	2.03
65078	6.372	214.369	6.1843	.18936	.04281	.003	.04279	1.43
65077	6.373	214.079	6.2311	.16353	.04283	.004	.04280	.97
65080	6.370	213.712	6.2823	.13961	.04267	.004	.04263	.03
65079	6.371	213.474	6.3220	.11760	.04309	.005	.04303	.56
65076	6.928	213.934	7.4446	.18925	.04797	.002	.04787	-.13
65075	6.929	213.759	7.4878	.16346	.04831	.003	.04819	.12
65074	6.929	213.375	7.5799	.13957	.04862	.005	.04846	-.21
65073	6.930	213.185	7.6293	.11757	.04903	.005	.04884	.11
65071	7.356	213.566	8.5847	.16346	.05295	.003	.05275	-.64
65070	7.357	213.304	8.6668	.13958	.05301	.005	.05276	-1.28
65069	7.358	213.126	8.7236	.11757	.05368	.007	.05340	-.52
65072	7.356	212.961	8.7709	.09745	.05366	.005	.05335	-.99
65067	7.759	213.712	9.5346	.18925	.05644	.004	.05623	-1.25
65066	7.759	213.375	9.6477	.16349	.05737	.003	.05710	-.45
65065	7.760	213.200	9.7090	.13953	.05756	.004	.05726	-.56
65068	7.759	213.080	9.7465	.11757	.05726	.006	.05694	-1.37
65064	8.254	213.798	10.6266	.21678	.06038	.002	.06019	-.88
65063	8.255	213.577	10.7022	.18916	.06079	.003	.06056	-.67
65062	8.255	213.415	10.7578	.16337	.06104	.003	.06079	-.60
65061	8.255	213.191	10.8356	.13947	.06131	.005	.06102	-.63
65059	8.697	213.742	11.5054	.21680	.06346	.003	.06328	-.43
65058	8.697	213.550	11.5691	.18915	.06392	.003	.06372	-.07
65057	8.698	213.349	11.6358	.16336	.06411	.005	.06388	-.15
65060	8.696	213.104	11.7127	.13952	.06449	.005	.06422	.01
65055	9.310	213.965	12.4179	.24619	.06672	.002	.06661	.21
65054	9.311	213.642	12.5139	.21667	.06707	.003	.06692	.22
65053	9.312	213.475	12.5642	.18903	.06704	.003	.06688	-.09
65056	9.309	213.336	12.6017	.16326	.06724	.005	.06706	.00
65052	10.068	214.655	13.1872	.34632	.06921	.002	.06918	.25

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 235 K W/m·K	deviation from correlation percent
65051	10.069	214.386	13.2576	.31107	.06976	.002	.06971	.66
65050	10.069	214.165	13.3158	.27768	.06979	.002	.06973	.39
65049	10.070	213.890	13.3873	.24623	.07016	.002	.07008	.53
65047	11.106	214.865	14.1448	.38360	.07303	.001	.07303	.71
65048	11.106	214.535	14.2180	.34629	.07333	.001	.07331	.71
65046	11.106	214.277	14.2756	.31111	.07371	.002	.07369	.90
65045	11.107	213.865	14.3675	.24629	.07408	.002	.07405	.88
65044	12.417	215.388	14.9938	.46314	.07699	.001	.07699	1.19
65043	12.418	214.771	15.1117	.38329	.07741	.002	.07741	1.03
65042	12.420	214.164	15.2277	.31081	.07800	.002	.07801	1.09
65041	12.422	213.575	15.3397	.24620	.07822	.002	.07824	.70
65040	14.257	215.850	15.9152	.55204	.08117	.001	.08114	.64
65039	14.257	215.227	16.0150	.46405	.08180	.001	.08179	.78
65038	14.257	214.710	16.0978	.38386	.08221	.001	.08222	.74
65037	14.256	214.290	16.1641	.31119	.08228	.001	.08231	.40
65036	16.764	216.298	16.8559	.64676	.08664	.001	.08655	.50
65035	16.766	215.635	16.9464	.55128	.08724	.001	.08719	.57
65034	16.764	215.026	17.0276	.46349	.08762	.001	.08762	.45
65033	16.767	214.509	17.0979	.38344	.08784	.001	.08788	.22
65032	20.275	215.935	17.9292	.64659	.09375	0.000	.09366	.08
65031	20.274	215.396	17.9898	.55110	.09422	0.000	.09418	.14
65030	20.273	214.891	18.0466	.46331	.09476	.001	.09477	.30
65029	20.270	214.387	18.1027	.38337	.09491	.001	.09497	.06
65028	24.891	216.265	18.8882	.74910	.10143	.001	.10129	-.13
65027	24.888	215.719	18.9400	.64594	.10199	.001	.10191	.04
65026	24.888	215.148	18.9947	.55067	.10220	.001	.10218	-.17
65025	24.886	214.700	19.0371	.46303	.10268	.001	.10271	-.02
65024	31.251	215.940	19.9356	.74886	.11115	.001	.11103	-.22
65023	31.251	215.396	19.9800	.64577	.11137	.001	.11132	-.36
65022	31.248	214.911	20.0192	.55055	.11176	.001	.11177	-.32
65021	31.245	214.518	20.0508	.46298	.11199	.001	.11205	-.35
65020	39.620	215.647	20.9638	.74856	.12178	.001	.12170	-.52
65019	39.618	215.127	21.0001	.64561	.12224	.001	.12222	-.43
65018	39.614	214.645	21.0334	.55037	.12254	.001	.12259	-.45
65017	39.613	214.236	21.0620	.46262	.12271	.001	.12281	-.53
65016	48.553	215.862	21.7900	.85834	.13178	0.000	.13167	-.44
65015	48.554	215.441	21.8164	.74778	.13202	0.000	.13196	-.47
65014	48.549	214.911	21.8490	.64510	.13238	0.000	.13239	-.45
65013	48.547	214.480	21.8758	.55003	.13296	.001	.13303	-.23
65012	57.652	216.114	22.4806	.97647	.14103	0.000	.14089	-.26
65011	57.648	215.631	22.5078	.85823	.14139	0.000	.14131	-.23
65010	57.648	215.140	22.5357	.74779	.14170	0.000	.14168	-.23
65009	57.645	214.779	22.5561	.64478	.14182	.001	.14185	-.31
65008	66.100	215.841	23.0571	.97558	.14935	.001	.14925	-.05
65007	66.103	215.368	23.0823	.85774	.14975	.001	.14971	.01
65006	66.101	214.932	23.1052	.74729	.15016	.001	.15017	.10
65005	66.103	214.525	23.1269	.64455	.15037	.001	.15043	.06
65004	69.263	215.706	23.2560	.97469	.15259	.001	.15251	.19
65003	69.269	215.349	23.2748	.85686	.15309	.001	.15305	.36
65002	69.277	214.975	23.2946	.74659	.15329	.001	.15329	.33
65001	69.276	214.553	23.3164	.64403	.15348	.001	.15353	.28
Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 235 K W/m·K	deviation from correlation percent
62096	.977	234.956	.5207	.13003	.02653	.002	.02653	.27
62095	.978	234.383	.5225	.10772	.02645	.003	.02652	.20
62094	.978	233.637	.5244	.08761	.02634	.004	.02649	.09
62093	.979	233.152	.5261	.06955	.02632	.006	.02653	.20
62092	3.145	235.032	1.8367	.20927	.02945	.001	.02934	-.60
62091	3.146	235.316	1.8457	.18078	.02945	.002	.02942	-.41
62090	3.147	234.753	1.8534	.15426	.02935	.002	.02938	-.61
62089	3.148	234.261	1.8598	.12990	.02936	.003	.02944	-.45
62088	5.135	235.158	3.3495	.20902	.03353	.002	.03351	.41
62087	5.135	234.655	3.3645	.18052	.03361	.002	.03364	.67
62086	5.135	234.220	3.3776	.15411	.03361	.002	.03368	.68
62085	5.135	233.740	3.3923	.12978	.03361	.003	.03373	.70
62084	7.129	236.400	5.1611	.34399	.03839	.002	.03829	-1.72
62083	7.129	235.396	5.2257	.27225	.03946	.001	.03943	.67
62082	7.131	234.339	5.2973	.20893	.03952	.004	.03957	.38
62081	7.132	233.533	5.3543	.15405	.04043	.006	.04053	2.26
62080	9.424	235.044	7.9786	.34344	.04971	.002	.04971	-.14
62079	9.425	234.249	8.0886	.27190	.05104	.003	.05105	1.63
62078	9.426	233.554	8.1888	.20877	.05041	.002	.05043	-.38
62077	9.427	232.938	8.2807	.15395	.05029	.004	.05031	-1.35
62076	11.469	235.259	10.3682	.42343	.05858	.001	.05858	-.32
62075	11.470	234.432	10.5075	.34347	.05903	.001	.05903	-.37
62074	11.471	233.788	10.6182	.27188	.05974	.002	.05975	.18
62073	11.472	233.227	10.7162	.20865	.05926	.003	.05927	-1.20
62072	13.600	235.523	12.2555	.51176	.06554	.001	.06552	.12
62071	13.600	234.841	12.3636	.42330	.06603	.001	.06603	.29
62070	13.601	234.078	12.4860	.34350	.06642	.001	.06645	.23
62069	13.602	233.513	12.5781	.27182	.06670	.003	.06675	.16

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adjusted Thermal Conductivity at a nominal Temperature W/m·K	deviation from correlation percent
62068	15.750	235.351	13.6925	.51118	.07173	.001	.07171	.89
62067	15.750	234.621	13.7970	.42296	.07219	.001	.07221	.96
62066	15.751	234.028	13.8826	.34302	.07238	.002	.07244	.76
62065	15.751	233.472	13.9629	.27164	.07282	.003	.07291	.93
62064	17.692	235.036	14.7069	.51102	.07644	.001	.07644	1.01
62063	17.692	234.425	14.7865	.42271	.07687	.001	.07691	1.12
62062	17.693	233.812	14.8669	.34272	.07712	.002	.07721	.98
62061	17.693	233.349	14.9277	.27164	.07740	.002	.07753	1.00
62060	20.536	234.799	15.8346	.51100	.08188	.001	.08190	.31
62059	20.535	234.255	15.8969	.42276	.08272	.001	.08279	.95
62058	20.535	233.698	15.9611	.34284	.08318	.002	.08331	1.11
62057	20.535	233.233	16.0146	.27156	.08348	.003	.08366	1.14
62056	23.411	235.343	16.6432	.60723	.08734	.001	.08730	.79
62055	23.411	234.724	16.7071	.51105	.08768	.001	.08771	.77
62054	23.411	234.109	16.7706	.42275	.08784	.001	.08794	.55
62053	23.410	233.639	16.8190	.34290	.08845	.002	.08860	.93
62052	26.932	235.025	17.5263	.60728	.09332	.001	.09332	.59
62051	26.932	234.553	17.5701	.51070	.09311	.001	.09316	.08
62050	26.932	234.168	17.6055	.42253	.09383	.001	.09393	.61
62049	26.931	233.546	17.6629	.34273	.09395	.002	.09413	.36
62048	30.368	235.148	18.1965	.60725	.09844	.001	.09842	.45
62047	30.366	234.592	18.2431	.51076	.09894	.001	.09899	.64
62046	30.361	234.248	18.2713	.42254	.09922	.002	.09931	.73
62045	30.360	233.560	18.3291	.34268	.09935	.002	.09953	.47
62044	34.092	234.964	18.8346	.60778	.10331	.001	.10331	-.08
62043	34.091	234.389	18.8791	.51113	.10359	.001	.10367	-.12
62042	34.090	233.804	18.9244	.42296	.10395	.001	.10410	-.09
62041	34.089	233.473	18.9501	.34297	.10356	.002	.10376	-.65
62040	37.551	235.426	19.3017	.71222	.10755	.001	.10749	-.15
62039	37.547	234.763	19.3495	.60739	.10794	.001	.10797	-.12
62038	37.547	234.319	19.3817	.51071	.10824	.001	.10833	-.07
62037	37.543	233.849	19.4154	.42265	.10825	.001	.10840	-.30
62036	41.022	235.318	19.7569	.71224	.11189	.001	.11185	-.17
62035	41.021	234.701	19.7989	.60740	.11212	.001	.11216	-.26
62034	41.021	234.205	19.8330	.51079	.11239	.001	.11249	-.27
62033	41.018	233.707	19.8669	.42271	.11263	.002	.11280	-.30
62032	44.354	235.189	20.1521	.71220	.11637	.001	.11635	.26
62031	44.354	234.641	20.1878	.60716	.11599	.001	.11604	-.33
62030	44.351	234.130	20.2208	.51047	.11643	.001	.11654	-.19
62029	44.350	233.731	20.2467	.42248	.11693	.002	.11709	.05
62028	47.931	235.016	20.5403	.71216	.12000	.001	.12000	-.14
62027	47.932	234.521	20.5712	.60724	.12028	.001	.12034	-.13
62026	47.927	234.030	20.6012	.51071	.12052	.002	.12064	-.15
62025	47.928	233.633	20.6258	.42257	.12049	.002	.12066	-.36
62024	51.244	234.971	20.8636	.71202	.12341	.001	.12341	-.26
62023	51.246	234.454	20.8946	.60714	.12389	.001	.12396	-.10
62022	51.243	234.029	20.9197	.51053	.12423	.001	.12435	-.01
62021	51.240	233.650	20.9420	.42240	.12465	.002	.12482	.16
62020	55.105	235.440	21.1818	.82488	.12730	.001	.12725	-.09
62019	55.104	234.914	21.2117	.71153	.12766	.001	.12767	-.03
62018	55.102	234.391	21.2413	.60687	.12801	.001	.12808	.02
62017	55.098	233.958	21.2657	.51030	.12822	.002	.12835	-.00
62016	58.418	235.316	21.4644	.82494	.13073	.001	.13069	-.01
62015	58.416	234.894	21.4875	.71153	.13080	.001	.13081	-.13
62014	58.416	234.436	21.5128	.60661	.13120	.001	.13127	-.01
62013	58.413	233.899	21.5421	.51034	.13157	.002	.13170	.05
62012	61.887	235.308	21.7356	.82502	.13415	.001	.13411	.09
62011	61.887	234.767	21.7644	.71169	.13448	.001	.13451	.11
62010	61.885	234.277	21.7903	.60696	.13461	.001	.13469	.01
62009	61.882	233.911	21.8097	.51024	.13451	.002	.13463	-.21
62008	65.387	235.226	21.9966	.82466	.13752	.001	.13749	.17
62007	65.384	234.756	22.0207	.71132	.13780	.001	.13783	.19
62006	65.382	234.141	22.0524	.60686	.13834	.002	.13844	.33
62005	65.381	233.842	22.0677	.51016	.13807	.002	.13820	.02
62004	68.761	235.239	22.2299	.82419	.14080	.001	.14077	.37
62003	68.761	234.730	22.2554	.71111	.14104	.001	.14107	.34
62002	68.757	234.268	22.2783	.60649	.14156	.001	.14164	.53
62001	68.757	233.731	22.3054	.51010	.14160	.002	.14174	.35

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m·K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 255 K W/m·K	deviation from correlation percent
61092	1.020	255.835	.4946	.14249	.02906	.003	.02896	.70
61091	1.020	255.177	.4964	.11810	.02900	.004	.02898	.75
61094	1.019	254.645	.4968	.09603	.02887	.005	.02891	.53
61093	1.019	253.943	.4985	.07628	.02881	.007	.02894	.60
61090	2.714	256.518	1.3862	.19811	.03098	.002	.03080	.21
61089	2.714	255.864	1.3913	.16914	.03081	.002	.03071	-.13
61088	2.716	255.237	1.3966	.14247	.03080	.003	.03077	.04
61087	2.717	254.735	1.4006	.11810	.03076	.004	.03079	.08
61086	4.718	255.777	2.5921	.19790	.03381	.002	.03372	.52
61085	4.721	255.276	2.6022	.16888	.03367	.003	.03364	.21
61084	4.726	254.679	2.6154	.14232	.03365	.004	.03369	.25

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61083	4.732	254.209	2.6271	.11795	.03350	.004	.03359	-.12
61097	6.551	256.067	3.8324	.22926	.03709	.002	.03698	.68
61096	6.552	255.011	3.8646	.16905	.03707	.003	.03707	.69
61095	6.555	254.140	3.8929	.11812	.03697	.004	.03706	.46
61079	6.558	253.452	3.9163	.07630	.03716	.008	.03732	.98
61082	6.788	256.771	3.9825	.29824	.03763	.001	.03744	.81
61081	6.788	255.562	4.0205	.22895	.03765	.002	.03759	.92
61080	6.789	254.504	4.0554	.16882	.03768	.003	.03773	1.04
61078	8.785	256.308	5.5387	.29843	.04254	.002	.04242	1.35
61077	8.785	255.358	5.5894	.22912	.04274	.003	.04271	1.62
61076	8.785	254.477	5.6379	.16903	.04276	.003	.04281	1.47
61075	8.786	253.831	5.6746	.11806	.04315	.006	.04325	2.21
61074	11.182	256.639	7.5248	.37633	.04911	.001	.04900	.15
61073	11.183	255.633	7.6096	.29800	.04934	.001	.04930	.11
61072	11.183	254.824	7.6799	.22883	.04949	.001	.04950	-.02
61071	11.187	254.114	7.7455	.16884	.04973	.002	.04979	.06
61070	13.268	256.101	9.2866	.37622	.05538	.001	.05532	-.42
61069	13.269	255.217	9.3799	.29802	.05549	.001	.05548	-.75
61068	13.270	254.473	9.4601	.22888	.05559	.001	.05562	-1.02
61067	13.273	253.901	9.5237	.16887	.05589	.002	.05595	-.84
61066	15.396	256.416	10.7802	.46416	.06085	.001	.06076	-.33
61065	15.397	255.651	10.8652	.37648	.06112	.001	.06108	-.32
61064	15.399	254.967	10.9428	.29803	.06134	.001	.06134	-.35
61063	15.401	254.357	11.0123	.22883	.06167	.002	.06171	-.17
61062	17.518	256.151	12.0678	.46392	.06596	.001	.06587	.10
61061	17.519	255.415	12.1484	.37629	.06619	.001	.06616	.05
61060	17.521	254.730	12.2248	.29801	.06643	.001	.06645	.04
61059	17.522	254.159	12.2883	.22884	.06667	.001	.06673	.09
61057	20.351	255.901	13.4372	.46368	.07195	0.000	.07187	.53
61056	20.352	255.130	13.5171	.37618	.07227	.001	.07226	.58
61055	20.353	254.542	13.5789	.29782	.07266	.001	.07270	.80
61058	20.351	254.029	13.6315	.22875	.07260	.001	.07269	.46
61054	23.422	256.273	14.5472	.56062	.07746	0.000	.07732	.74
61053	23.422	255.560	14.6155	.46396	.07781	.001	.07775	.84
61052	23.423	254.902	14.6790	.37633	.07792	.001	.07793	.65
61051	23.423	254.313	14.7359	.29804	.07809	.001	.07817	.57
61050	26.850	255.901	15.6055	.56029	.08305	.001	.08294	.51
61049	26.850	255.234	15.6645	.46356	.08338	.001	.08335	.59
61048	26.851	254.549	15.7257	.37613	.08345	.002	.08351	.34
61047	26.849	254.205	15.7556	.29770	.08391	.002	.08401	.72
61046	30.401	255.776	16.4802	.56014	.08833	.001	.08823	.32
61045	30.399	255.193	16.5276	.46342	.08852	.001	.08850	.27
61044	30.400	254.584	16.5776	.37603	.08907	.001	.08912	.60
61043	30.397	254.087	16.6177	.29777	.08915	.002	.08927	.46
61042	33.905	255.663	17.2043	.56015	.09323	.001	.09314	.21
61041	33.907	255.054	17.2509	.46350	.09361	.001	.09360	.34
61040	33.909	254.579	17.2875	.37602	.09388	.001	.09394	.41
61039	33.909	254.064	17.3268	.29769	.09394	.002	.09406	.24
61038	37.376	255.663	17.9138	.55991	.09780	.001	.09771	.19
61037	37.374	255.091	17.8543	.46338	.09811	.001	.09810	.26
61036	37.373	254.512	17.8955	.37606	.09820	.002	.09827	.10
61035	37.374	254.068	17.9274	.29770	.09838	.002	.09851	.08
61034	40.731	256.199	18.2959	.66481	.10193	.001	.10177	.35
61033	40.729	255.692	18.3298	.55936	.10218	.001	.10209	.39
61032	40.727	255.244	18.3598	.46315	.10249	.001	.10246	.50
61030	44.631	256.203	18.8319	.66637	.10593	.001	.10577	-.21
61029	44.631	255.607	18.8697	.56050	.10628	.001	.10620	-.12
61028	44.631	254.993	18.9087	.46397	.10634	.001	.10634	-.32
61027	44.632	254.544	18.9373	.37645	.10682	.002	.10688	-.05
61026	48.090	256.097	19.2644	.66640	.10970	.001	.10956	-.32
61025	48.089	255.479	19.3017	.56065	.11007	.001	.11001	-.23
61024	48.089	254.909	19.3363	.46402	.11033	.002	.11034	-.21
61023	48.087	254.428	19.3653	.37632	.11059	.002	.11066	-.17
61022	51.674	255.939	19.6753	.66635	.11361	.001	.11349	-.28
61021	51.673	255.358	19.7088	.56051	.11379	.001	.11374	-.34
61020	51.672	254.925	19.7338	.46380	.11397	.001	.11398	-.35
61019	51.673	254.412	19.7636	.37609	.11422	.002	.11429	-.33
61018	56.210	256.371	20.1124	.78108	.11793	.001	.11776	-.33
61017	56.209	255.786	20.1444	.66598	.11819	.001	.11809	-.33
61016	56.207	255.239	20.1742	.56023	.11843	.001	.11840	-.32
61015	56.208	254.711	20.2032	.46369	.11839	.002	.11843	-.55
61014	56.203	254.267	20.2272	.37609	.11912	.002	.11921	-.10
61012	59.687	255.471	20.4844	.66526	.12184	.001	.12178	-.19
61013	59.690	255.429	20.4868	.66531	.12189	.001	.12184	-.16
61010	59.684	254.396	20.5409	.46317	.12209	.002	.12216	-.37
61009	59.683	254.078	20.5578	.37569	.12246	.002	.12257	-.18
61008	63.260	255.957	20.7686	.78036	.12586	.002	.12575	.55
61007	63.260	255.379	20.7981	.66515	.12659	.003	.12655	.92
61006	63.255	254.993	20.8173	.55951	.12468	.003	.12468	-.73
61005	63.252	254.436	20.8456	.46299	.12537	.002	.12543	-.38
61004	66.477	255.922	21.0323	.77958	.12880	.001	.12870	.56
61003	66.480	255.361	21.0603	.66483	.12865	.001	.12861	.25
61002	66.474	254.827	21.0863	.55938	.12888	.002	.12890	.25
61001	66.473	254.429	21.1059	.46281	.12852	.001	.12858	-.17

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 275 K W/m.K	Thermal Conductivity deviation from correlation percent
63100	1.015	275.820	.4533	.15447	.03152	.003	.03141	.62
63099	1.015	275.218	.4543	.12805	.03144	.004	.03141	.61
63098	1.015	274.623	.4557	.10417	.03134	.004	.03139	.54
63097	1.016	274.083	.4569	.08270	.03134	.006	.03146	.76
63096	2.495	276.019	1.1547	.18276	.03288	.002	.03275	.08
63095	2.495	275.382	1.1581	.15400	.03289	.003	.03284	.34
63094	2.496	274.765	1.1617	.12766	.03277	.004	.03280	.20
63093	2.497	274.285	1.1647	.10385	.03274	.005	.03283	.28
63092	4.446	275.546	2.1646	.18263	.03509	.002	.03502	.18
63091	4.447	275.066	2.1703	.15388	.03495	.003	.03494	-.08
63090	4.448	274.433	2.1779	.12765	.03499	.004	.03506	.22
63089	4.449	274.021	2.1830	.10386	.03489	.005	.03501	.05
63088	6.508	275.252	3.3374	.18298	.03804	.003	.03801	.72
63087	6.508	274.818	3.3462	.15423	.03809	.003	.03811	.93
63086	6.507	274.354	3.3553	.12793	.03807	.004	.03815	.97
63085	6.507	274.121	3.3599	.10417	.03816	.005	.03827	1.25
63084	8.401	277.314	4.4373	.32364	.04135	.001	.04108	1.12
63083	8.402	276.746	4.4551	.28484	.04134	.002	.04113	1.13
63082	8.405	276.190	4.4739	.24858	.04126	.001	.04112	.97
63081	8.405	275.541	4.4950	.21474	.04120	.002	.04114	.87
63080	10.552	276.595	5.8401	.32376	.04551	.001	.04534	1.17
63079	10.553	276.054	5.8653	.28500	.04548	.001	.04537	1.06
63078	10.555	275.617	5.8864	.24862	.04543	.002	.04536	.90
63077	10.559	275.127	5.9119	.21474	.04547	.002	.04546	.93
63076	12.673	276.632	7.2307	.36443	.05004	.001	.04988	.74
63075	12.674	276.126	7.2618	.32326	.05012	.001	.05001	.77
63074	12.675	275.640	7.2925	.28456	.05008	.002	.05002	.57
63073	12.678	275.203	7.3212	.24835	.05007	.002	.05005	.43
63072	14.652	276.728	8.4852	.40823	.05439	.001	.05423	.31
63071	14.653	276.201	8.5237	.36445	.05443	.001	.05432	.22
63070	14.655	275.829	8.5513	.32336	.05449	.002	.05441	.20
63069	14.656	275.404	8.5826	.28458	.05452	.002	.05448	.12
63068	16.954	276.345	9.8597	.40830	.05929	.001	.05917	.07
63067	16.954	275.929	9.8929	.36458	.05945	.001	.05937	.20
63066	16.956	275.539	9.9250	.32329	.05941	.001	.05936	-.00
63065	16.957	275.111	9.9603	.28452	.05939	.002	.05938	-.19
63064	19.153	276.052	11.0121	.40854	.06356	.001	.06346	.03
63063	19.154	275.714	11.0404	.36476	.06373	.001	.06366	.18
63062	19.155	275.280	11.0768	.32359	.06382	.002	.06379	.16
63061	19.155	275.004	11.0999	.28482	.06383	.002	.06383	.08
63060	21.322	276.700	11.9243	.50337	.06746	.001	.06728	.34
63059	21.323	275.909	11.9898	.40841	.06757	.001	.06747	.23
63058	21.324	275.069	12.0602	.32360	.06782	.002	.06781	.30
63057	21.325	274.513	12.1070	.24851	.06784	.003	.06789	.13
63056	23.529	276.428	12.8008	.50352	.07133	.001	.07116	.57
63055	23.529	275.693	12.8606	.40849	.07146	.001	.07138	.50
63054	23.531	274.982	12.9192	.32356	.07168	.002	.07168	.56
63053	23.535	274.401	12.9684	.24843	.07155	.003	.07162	.16
63052	26.983	276.181	13.9511	.50294	.07678	.001	.07663	.67
63051	26.984	275.483	14.0059	.40809	.07696	.001	.07690	.66
63050	26.986	274.770	14.0625	.32330	.07718	.002	.07721	.70
63049	26.988	274.248	14.1042	.24830	.07728	.003	.07738	.64
63048	30.486	276.033	14.9146	.50312	.08188	.001	.08174	.71
63047	30.487	275.358	14.9651	.40824	.08186	.003	.08181	.46
63046	30.488	274.715	15.0134	.32341	.08231	.002	.08235	.78
63045	30.490	274.239	15.0495	.24842	.08232	.003	.08242	.63
63044	33.987	276.647	15.6786	.60746	.08653	.001	.08630	.83
63043	33.989	275.018	15.7232	.50276	.08678	.002	.08664	.90
63042	33.987	275.248	15.7773	.40817	.08684	.002	.08680	.72
63041	33.991	274.869	15.8051	.32315	.08710	.002	.08712	.88
63040	37.531	276.150	16.4198	.60705	.09067	0.000	.09050	.25
63039	37.530	275.502	16.4630	.50242	.08976	.002	.08969	-.98
63038	37.529	274.848	16.5068	.40772	.09182	.001	.09184	1.07
63037	37.528	274.390	16.5375	.32321	.08826	.002	.08835	-3.08
63036	41.154	276.052	17.0581	.60709	.09492	0.000	.09477	.10
63035	41.153	275.385	17.1004	.50251	.09586	.001	.09580	.87
63034	41.151	274.737	17.1416	.40785	.09528	.001	.09532	.05
63033	41.151	274.280	17.1709	.32303	.09576	.001	.09586	.40
63032	44.660	275.921	17.6090	.60719	.09929	.001	.09916	.43
63031	44.660	275.284	17.6477	.50258	.10015	.001	.10011	1.08
63030	44.660	274.679	17.6845	.40788	.09936	.002	.09941	.10
63029	44.660	274.171	17.7156	.32297	.09927	.001	.09939	-.16
63028	48.079	275.776	18.0940	.60693	.10277	.001	.10266	.13
63027	48.080	275.237	18.1255	.50235	.10290	.001	.10287	.09
63026	48.078	274.656	18.1590	.40762	.10284	.001	.10289	-.15
63025	48.078	274.170	18.1874	.32293	.10364	.001	.10376	.46
63024	51.734	276.282	18.5276	.72174	.10645	.001	.10627	.18
63023	51.733	275.668	18.5617	.60700	.10652	.001	.10643	.05
63022	51.733	275.120	18.5922	.50235	.10682	.001	.10680	.16

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63021	51.732	274.592	18.6215	.40764	.10677	.001	.10683	-.05
63020	55.237	276.367	18.9287	.72086	.10987	.001	.10969	.14
63019	55.235	275.610	18.9690	.60660	.11000	.001	.10992	.03
63018	55.235	275.048	18.9990	.50223	.11026	.001	.11025	.10
63017	55.233	274.537	19.0262	.40756	.11059	.001	.11065	.24
63016	58.748	276.173	19.3137	.72115	.11329	.001	.11314	.14
63015	58.747	275.531	19.3467	.60682	.11347	.001	.11340	.11
63014	58.748	274.999	19.3742	.50221	.11361	.001	.11361	.07
63013	58.749	274.471	19.4015	.40762	.11393	.001	.11400	.19
63012	62.502	276.101	19.6879	.72083	.11694	.001	.11680	.30
63011	62.503	275.477	19.7190	.60654	.11710	.001	.11704	.25
63010	62.499	274.905	19.7470	.50205	.11722	.002	.11723	.18
63009	62.497	274.457	19.7691	.40740	.11744	.002	.11751	.24
63008	65.832	275.948	20.0016	.72167	.12004	.001	.11993	.38
63007	65.838	275.385	20.0291	.60707	.12010	.001	.12005	.26
63006	65.840	274.943	20.0507	.50242	.12014	.002	.12015	.16
63005	65.839	274.423	20.0756	.40757	.12016	.002	.12023	.02
63004	69.251	276.499	20.2712	.84619	.12280	.001	.12263	.40
63003	69.252	275.940	20.2974	.72168	.12306	.001	.12295	.45
63002	69.254	275.379	20.3237	.60710	.12327	.001	.12323	.45
63001	69.256	274.798	20.3509	.50235	.12333	.002	.12335	.33

					Experimental Thermal		Adjusted Thermal at a nominal	Conductivity deviation
Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Conductivity W/m·K	STAT	Temperature of 295 K W/m·K	from correlation percent
64096	.988	296.783	.4076	.19678	.03402	.001	.03376	-.49
64095	.988	296.042	.4087	.16582	.03389	.002	.03374	-.56
64094	.988	295.352	.4098	.13751	.03383	.002	.03378	-.44
64093	.989	294.797	.4110	.11185	.03357	.003	.03360	-.98
64092	1.949	296.430	.8198	.19679	.03477	.002	.03456	-.63
64091	1.949	295.783	.8218	.16583	.03465	.002	.03454	-.72
64090	1.950	295.177	.8242	.13753	.03465	.002	.03462	-.47
64089	1.950	294.638	.8260	.11181	.03451	.004	.03456	-.66
64088	3.911	296.023	1.7091	.19687	.03648	.002	.03633	-.91
64087	3.912	295.413	1.7140	.16594	.03651	.002	.03645	-.61
64086	3.913	294.915	1.7180	.13757	.03640	.003	.03641	-.74
64085	3.914	294.458	1.7220	.11184	.03638	.003	.03646	-.63
64083	5.976	296.320	2.7045	.23054	.03882	.002	.03863	-.61
64082	5.978	295.741	2.7133	.19686	.03879	.002	.03869	-.53
64081	5.981	295.153	2.7226	.16583	.03866	.003	.03864	-.70
64084	5.974	294.671	2.7256	.13760	.03862	.003	.03867	-.65
64080	8.077	295.849	3.7900	.30408	.04152	.001	.04140	-.15
64079	8.079	295.213	3.8044	.26540	.04159	.001	.04156	.14
64078	8.082	294.626	3.8184	.22936	.04152	.001	.04157	.08
64077	8.087	294.135	3.8317	.19587	.04146	.002	.04158	.02
64076	10.365	295.366	5.0327	.30417	.04499	.001	.04494	.35
64075	10.367	294.726	5.0539	.26549	.04503	.001	.04507	.49
64074	10.369	294.274	5.0689	.22937	.04496	.001	.04506	.37
64073	10.373	293.791	5.0863	.19590	.04498	.001	.04514	.45
64072	12.169	294.991	6.0388	.30407	.04808	.001	.04808	.60
64071	12.171	294.453	6.0612	.26539	.04798	.001	.04805	.39
64070	12.173	293.987	6.0808	.22933	.04822	.002	.04835	.88
64069	12.176	293.540	6.1007	.19590	.04813	.002	.04832	.68
64068	14.295	296.186	7.1437	.43623	.05170	.001	.05155	.27
64067	14.297	295.091	7.1977	.34554	.05178	.001	.05177	.33
64066	14.297	294.119	7.2458	.26546	.05174	.001	.05185	.17
64065	14.299	293.367	7.2843	.19579	.05159	.002	.05179	-.20
64064	16.379	295.764	8.2537	.43582	.05529	.001	.05520	-.21
64063	16.379	294.721	8.3126	.34532	.05535	.001	.05538	-.26
64062	16.381	293.904	8.3600	.26521	.05534	.002	.05547	-.41
64061	16.382	293.091	8.4079	.19581	.05532	.002	.05554	-.59
64060	18.657	295.420	9.3830	.43576	.05917	.001	.05912	-.57
64059	18.658	294.415	9.4460	.34537	.05936	.001	.05943	-.44
64058	18.659	293.588	9.4990	.26536	.05936	.002	.05953	-.61
64057	18.662	292.903	9.5440	.19582	.05952	.003	.05977	-.48
64056	21.429	295.068	10.6132	.43616	.06390	.001	.06389	-.36
64055	21.432	294.252	10.6684	.34547	.06409	.003	.06418	-.24
64054	21.432	293.482	10.7200	.26544	.06409	.002	.06428	-.40
64053	21.434	292.793	10.7671	.19593	.06431	.004	.06458	-.21
64052	25.128	295.659	11.9458	.53780	.06921	.002	.06912	-.62
64051	25.127	294.864	11.9987	.43644	.06971	.001	.06973	-.07
64050	25.128	294.012	12.0565	.34590	.06969	.002	.06982	-.29
64049	25.126	293.449	12.0942	.26552	.06976	.003	.06997	-.31
64048	28.719	295.579	13.0659	.53714	.07460	.001	.07452	-.07
64047	28.716	294.771	13.1185	.43594	.07485	.001	.07488	.09
64046	28.712	294.080	13.1632	.34540	.07495	.002	.07508	.08
64045	28.713	293.601	13.1955	.26524	.07484	.003	.07504	-.18
64044	32.484	296.573	13.9937	.65080	.07914	.001	.07890	-.28
64043	32.483	295.711	14.0486	.53881	.07927	.001	.07916	-.31
64042	32.484	295.042	14.0918	.43712	.07926	.001	.07925	-.47
64041	32.485	294.303	14.1396	.34634	.07989	.002	.08000	.15
64040	36.134	296.404	14.8338	.65093	.08342	.001	.08320	-.52
64039	36.135	295.521	14.8886	.53897	.08366	.001	.08358	-.43

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 310 K W/m.K	Conductivity deviation from correlation percent
64038	36.136	294.862	14.9298	.43735	.08384	.001	.08386	-.37
64037	36.136	294.272	14.9667	.34643	.08398	.002	.08409	-.34
64036	39.442	296.324	15.5008	.65087	.08733	.001	.08712	-.44
64035	39.442	295.531	15.5482	.53889	.08743	.001	.08735	-.51
64034	39.444	294.765	15.5946	.43749	.08756	.002	.08760	-.54
64033	39.444	294.155	15.6314	.34659	.08786	.002	.08799	-.34
64032	42.826	296.155	15.1165	.65110	.09103	.001	.09085	-.53
64031	42.826	295.472	16.1560	.53893	.09127	.001	.09119	-.43
64030	42.827	294.753	16.1979	.43748	.09125	.001	.09129	-.62
64029	42.827	294.259	16.2266	.34638	.09136	.001	.09148	-.62
64028	46.333	296.097	16.6848	.65081	.09470	.001	.09453	-.59
64027	46.333	295.347	16.7267	.53894	.09492	.001	.09487	-.54
64026	46.333	294.739	16.7505	.43735	.09497	.001	.09501	-.63
64025	46.334	294.112	16.7959	.34655	.09524	.001	.09538	-.49
64024	49.998	296.086	17.2192	.65100	.09847	.001	.09830	-.54
64023	50.000	295.349	17.2589	.53908	.09867	.001	.09862	-.51
64022	50.000	294.672	17.2954	.43753	.09883	.001	.09888	-.50
64021	50.001	294.162	17.3230	.34655	.09914	.001	.09927	-.31
64020	53.680	295.878	17.7173	.65037	.10213	.001	.10200	-.50
64019	53.681	295.267	17.7491	.53834	.10220	.001	.10216	-.57
64018	53.682	294.552	17.7863	.43704	.10237	.001	.10244	-.58
64017	53.685	294.003	17.8151	.34631	.10249	.002	.10264	-.59
64016	57.061	295.330	18.1555	.65059	.10541	.001	.10536	-.50
64015	57.060	294.706	18.1867	.53859	.10558	.001	.10562	-.49
64014	57.061	294.110	18.2167	.43712	.10584	.001	.10597	-.38
64013	57.062	293.609	18.2420	.34613	.10574	.001	.10594	-.60
64012	60.576	295.232	18.5549	.64984	.10865	.001	.10862	-.45
64011	60.576	294.648	18.5831	.53789	.10885	.001	.10890	-.40
64010	60.578	294.036	18.6130	.43664	.10897	.001	.10910	-.44
64009	60.577	293.630	18.6327	.34590	.10909	.002	.10928	-.42
64008	63.953	295.187	18.9095	.65023	.11177	.001	.11174	-.28
64007	63.958	294.555	18.9397	.53831	.11204	.001	.11210	-.19
64006	63.952	294.012	18.9646	.43686	.11193	.002	.11206	-.41
64005	63.951	293.475	18.9898	.34595	.11241	.002	.11261	-.11
64004	67.319	295.776	19.2118	.77273	.11471	.001	.11461	-.04
64003	67.321	295.118	19.2419	.65036	.11491	.001	.11489	-.02
64002	67.320	294.631	19.2640	.53844	.11510	.002	.11515	.03
64001	67.323	294.106	19.2881	.43691	.11521	.002	.11532	.00

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 310 K W/m.K	Conductivity deviation from correlation percent
60100	1.076	309.085	.4258	.17384	.03591	.003	.03606	-.57
60099	1.076	308.341	.4270	.14426	.03610	.003	.03636	.28
60098	1.077	307.755	.4282	.11737	.03581	.005	.03617	-.27
60097	1.077	307.128	.4291	.09326	.03558	.006	.03604	-.64
60096	2.675	309.214	1.0856	.20634	.03742	.002	.03754	-.18
60095	2.675	308.624	1.0881	.17389	.03733	.002	.03755	-.18
60094	2.676	308.033	1.0908	.14421	.03701	.004	.03732	-.81
60093	2.678	307.414	1.0939	.11735	.03693	.005	.03734	-.78
60092	4.743	309.391	1.9844	.24167	.03936	.002	.03945	-.12
60091	4.743	308.849	1.9889	.20631	.03910	.002	.03928	-.59
60090	4.743	308.250	1.9942	.17401	.03915	.002	.03942	-.25
60089	4.744	307.648	1.9996	.14425	.03901	.003	.03937	-.40
60088	6.732	309.635	2.8926	.27951	.04148	.002	.04154	.06
60087	6.732	309.040	2.9007	.24155	.04153	.002	.04168	.35
60086	6.733	308.464	2.9086	.20630	.04146	.002	.04170	.35
60085	6.733	307.941	2.9159	.17389	.04127	.003	.04159	.05
60084	8.876	309.267	3.9213	.27950	.04426	.002	.04437	.90
60083	8.876	308.712	3.9324	.24146	.04395	.002	.04415	.33
60082	8.877	308.170	3.9436	.20633	.04402	.002	.04430	.61
60081	8.877	307.710	3.9533	.17389	.04403	.003	.04438	.73
60080	11.038	310.021	4.9610	.36387	.04719	.001	.04719	1.01
60079	11.039	308.898	4.9916	.27955	.04715	.001	.04731	1.10
60078	11.039	307.879	5.0197	.20636	.04683	.002	.04715	.58
60077	11.039	307.031	5.0435	.14425	.04695	.003	.04739	.95
60076	13.147	309.673	6.0076	.36383	.05009	.001	.05014	.75
60075	13.147	308.603	6.0448	.27955	.04996	.001	.05016	.58
60074	13.148	307.642	6.0788	.20642	.05023	.002	.05057	1.17
60073	13.148	306.841	6.1075	.14427	.05033	.003	.05079	1.42
60072	15.185	309.353	7.0079	.36383	.05320	.001	.05329	.63
60071	15.186	308.309	7.0518	.27961	.05323	.001	.05347	.69
60070	15.186	307.523	7.0852	.20635	.05323	.001	.05358	.69
60069	15.186	306.746	7.1185	.14428	.05325	.002	.05371	.71
60068	17.278	310.102	7.9505	.45930	.05639	.001	.05638	.33
60067	17.278	308.975	8.0039	.36381	.05647	.001	.05661	.41
60066	17.277	308.110	8.0452	.27948	.05644	.001	.05671	.32
60065	17.276	307.320	8.0833	.20629	.05646	.002	.05683	.30
60064	19.464	309.770	8.9257	.45913	.05973	.001	.05976	.08
60063	19.463	308.761	8.9783	.36384	.05986	.001	.06003	.21
60062	19.463	307.944	9.0216	.27951	.05983	.001	.06012	.08
60061	19.462	307.225	9.0596	.20632	.06000	.002	.06039	.29
60060	22.418	309.480	10.1219	.45925	.06411	.001	.06419	-.08

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60059	22.418	308.591	10.1725	.36391	.06422	.001	.06442	-.01
60058	22.418	307.806	10.2174	.27970	.06422	.002	.06454	-.11
60057	22.418	307.109	10.2575	.20643	.06411	.003	.06453	-.37
60056	26.028	309.260	11.3935	.45915	.06920	.001	.06931	-.08
60055	26.028	308.444	11.4416	.36385	.06941	.001	.06965	.11
60054	26.028	307.756	11.4821	.27957	.06941	.002	.06975	.01
60053	26.028	307.136	11.5190	.20632	.06952	.003	.06996	.08
60052	29.477	310.093	12.3802	.56605	.07393	.001	.07392	.31
60051	29.477	309.235	12.4302	.45930	.07395	.001	.07407	.22
60050	29.476	308.527	12.4718	.36374	.07417	.002	.07441	.41
60049	29.475	307.869	12.5103	.27962	.07430	.002	.07464	.49
60048	33.098	309.694	13.3468	.56642	.07815	.001	.07820	-.07
60047	33.097	308.929	13.3909	.45962	.07827	.001	.07845	-.03
60046	33.098	308.143	13.4369	.36424	.07833	.001	.07864	-.08
60045	33.098	307.430	13.4758	.27986	.07850	.001	.07892	.03
60044	36.518	309.498	14.1404	.56640	.08199	.001	.08208	-.28
60043	36.519	308.688	14.1867	.45974	.08222	.001	.08244	-.13
60042	36.520	308.056	14.2230	.36418	.08215	.001	.08248	-.32
60041	36.521	307.447	14.2583	.27977	.08216	.002	.08259	-.41
60040	39.909	309.222	14.8464	.56604	.08588	.001	.08601	-.18
60039	39.909	308.550	14.8839	.45928	.08603	.001	.08628	-.12
60038	39.911	307.881	14.9216	.36395	.08621	.001	.08657	-.03
60037	39.914	307.206	14.9600	.27972	.08623	.002	.08671	-.12
60036	43.084	309.943	15.3906	.58368	.08913	.001	.08914	-.21
60035	43.083	309.132	15.4344	.56615	.08928	.001	.08943	-.18
60034	43.081	308.403	15.4736	.45964	.08918	.002	.08945	-.41
60033	43.079	307.807	15.5057	.36412	.08970	.002	.09008	.07
60032	46.727	309.716	16.0098	.68405	.09303	.001	.09308	-.05
60031	46.727	309.019	16.0464	.56624	.09312	.001	.09329	-.07
60030	46.726	308.324	16.0828	.45963	.09305	.002	.09333	-.27
60029	46.725	307.749	16.1130	.36403	.09325	.002	.09363	-.16
60028	50.127	309.703	16.5254	.68344	.09630	.001	.09635	-.11
60027	50.126	308.899	16.5662	.56592	.09644	.001	.09662	-.11
60026	50.126	308.226	16.6007	.45933	.09638	.001	.09668	-.29
60025	50.126	307.650	16.6302	.36396	.09665	.002	.09704	-.12
60024	53.476	309.618	16.9956	.68350	.09950	.001	.09956	-.08
60023	53.476	308.897	17.0313	.56589	.09960	.001	.09978	-.11
60022	53.476	308.209	17.0654	.45939	.09974	.001	.10003	-.10
60021	53.475	307.616	17.0949	.36402	.09982	.002	.10021	-.13
60020	57.009	309.416	17.4585	.68371	.10283	.001	.10292	.01
60019	57.009	308.753	17.4904	.56610	.10306	.001	.10326	.11
60018	57.009	308.134	17.5202	.45956	.10301	.002	.10331	-.05
60017	57.008	307.513	17.5501	.36411	.10321	.002	.10360	.02
60016	60.531	309.215	17.8809	.68393	.10601	.001	.10612	.09
60015	60.530	308.655	17.9116	.56630	.10623	.001	.10644	.17
60014	60.531	308.072	17.9389	.45961	.10653	.003	.10682	.34
60013	60.531	307.537	17.9640	.36404	.10647	.002	.10684	.19
60012	64.078	309.320	18.2916	.68251	.10919	.001	.10929	.27
60011	64.078	308.648	18.3021	.56485	.10926	.001	.10946	.20
60010	64.075	308.025	18.3300	.45896	.10942	.002	.10971	.23
60009	64.077	307.462	18.3558	.36370	.10948	.002	.10985	.18
60003	66.672	313.129	18.3733	.68185	.11038	.001	.10992	.12
60002	66.678	312.494	18.4018	.56460	.11055	.001	.11019	.16
60004	66.670	311.828	18.4301	.45825	.11076	.001	.11050	.24
60001	66.685	311.372	18.4517	.36312	.11071	.002	.11051	.10
60008	67.415	309.358	18.6139	.68343	.11215	.001	.11224	.49
60007	67.414	308.758	18.6402	.56591	.11244	.001	.11261	.63
60006	67.414	308.136	18.6676	.45943	.11259	.002	.11285	.65
60005	67.416	307.614	18.6909	.36422	.11278	.003	.11311	.71

4. Ethane Results

A total of 797 points are given in Table 4. The results are reported in [10]. The computer programs developed for the thermal conductivity surface of ethane are shown below. The equation of state used for ethane is given in [11].

```
      FUNCTION C2H6TC(RHO,T)
C     COEF. FROM TCO21 AND MINIMS 15 MAR 84, 4TH PASS
      DIMENSION A(3),B(9)
      DATA A/-.4324979108E-02
     1 , .4892828913E-04 , .1250947155E-06 /
      DATA B/
     1   .2377714804E-02 ,-.7276758542E-06 ,-.1022365973E+02
     1 ,-.3617304226E-01 , .1027484150E-03 , .1229770283E-08
     1 , .2685444816E+01 , .1345117409E-01 ,-.3761853511E-04/
      TERM1=A(1)+A(2)*T+A(3)*T**2
      TERM2=(B(1)+B(2)*T)*RHO
      BEE=EXP(B(3)+B(4)*T+B(5)*T**2+B(6)*T**3)
      ENN=B(7)+B(8)*T+B(9)*T**2
      TERM3=BEE*RHO**ENN
      C2H6TC=TERM1+TERM2+TERM3+C2H6CR(RHO,T)
      RETURN
      END


      FUNCTION C2H6CR(RHO,TEMP)
C     COEF. FROM TCO21 AND MINIMS 15 MAR 84, 4TH PASS
      DIMENSION C(6)
      DATA (TC=305.33),(RHOC=6.80)
      DATA C/-.6179783534E-01
     1 ,-.3020000000E+03 , .3546146027E+00 ,-.1036454167E-02
     1 ,-.3170704764E+00 , .3237818922E+00 /
      T=TEMP
      DEN=RHO
      IF(T.LT.TC) T=TC+(TC-T)
      IF(T.LT.340.597) GO TO 4
      C2H6CR=0.
      RETURN
    4 CONTINUE
      AMPL=C(1)/(T+C(2))+C(3)+C(4)*T
      DELRHO=DEN-RHOC
      X1=C(5)*DELRHO
      IF(DEN.GT.6.80) X1=C(6)*DELRHO
      C2H6CR=AMPL*EXP(-X1**2)
      RETURN
      END
```

Table 4. The Thermal Conductivity of Ethane

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 110 K W/m.K	Conductivity deviation from correlation percent
81072	.719	112.472	20.8794	1.18021	.23728	.001	.23613	.01
81071	.717	112.265	20.8869	1.08943	.23765	.001	.23659	.09
81070	.714	112.125	20.8920	1.00333	.23842	.001	.23743	.36
81069	.713	111.929	20.8991	.92003	.23852	.001	.23761	.34
81068	14.436	112.488	21.0719	1.17941	.24436	0.000	.24314	.07
81067	14.432	112.263	21.0796	1.08880	.24454	.001	.24343	.07
81066	14.428	111.945	21.0907	1.00152	.24455	.001	.24359	-.03
81065	14.424	111.866	21.0934	.91961	.24605	.002	.24513	.56
81064	27.531	112.380	21.2477	1.17833	.25066	0.000	.24944	.02
81063	27.522	112.271	21.2513	1.08768	.25083	.001	.24967	.06
81062	27.514	112.016	21.2597	1.00108	.25107	.001	.25004	.08
81061	27.507	111.860	21.2648	.91871	.25158	.001	.25062	.24
81060	41.111	112.368	21.4165	1.17716	.25664	.001	.25538	-.12
81059	41.092	112.085	21.4254	1.08650	.25644	.001	.25533	-.27
81058	41.105	111.867	21.4326	.99996	.25671	.001	.25571	-.23
81057	41.095	111.688	21.4383	.91763	.25698	.001	.25607	-.17
81056	54.606	112.228	21.5798	1.17584	.26186	.001	.26063	-.48
81055	54.602	112.043	21.5856	1.08571	.26227	.001	.26114	-.37
81054	54.592	111.958	21.5881	1.00016	.26280	.001	.26171	-.19
81053	54.584	111.824	21.5922	.91759	.26277	.001	.26175	-.23
81052	69.187	111.681	21.7602	.91630	.26869	.001	.26772	-.44
81051	69.187	112.147	21.7460	1.08608	.26853	.001	.26729	-.39
81050	69.182	112.291	21.7416	1.17576	.26808	.001	.26676	-.52
81049	69.183	111.984	21.7509	.99974	.26873	.001	.26758	-.35

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 135 K W/m.K	Conductivity deviation from correlation percent
81096	.443	134.971	20.0461	1.16453	.21724	0.000	.21725	.14
81095	.441	134.640	20.0584	1.06426	.21770	0.000	.21782	.21
81094	.439	134.361	20.0687	.96848	.21762	0.000	.21783	.05
81093	.437	134.071	20.0795	.87763	.21817	0.000	.21847	.18
81092	13.900	134.854	20.2847	1.16385	.22558	0.000	.22563	.20
81091	13.896	134.565	20.2947	1.06351	.22591	0.000	.22606	.23
81090	13.892	134.184	20.3080	.96755	.22579	0.000	.22607	.03
81089	13.886	134.078	20.3116	.87726	.22667	.001	.22699	.38
81088	27.791	134.744	20.5084	1.16294	.23321	0.000	.23330	.07
81087	27.783	134.456	20.5179	1.06278	.23357	.001	.23376	.12
81086	27.777	134.246	20.5247	.96747	.23395	0.000	.23422	.21
81085	27.772	134.088	20.5299	.87687	.23434	.001	.23467	.32
81084	40.170	134.918	20.6844	1.26688	.23997	.001	.24000	.18
81083	40.158	134.690	20.6914	1.16220	.24001	0.000	.24013	.12
81082	40.151	134.471	20.6983	1.06229	.24029	.001	.24049	.17
81081	40.146	134.226	20.7060	.96729	.24066	.001	.24095	.24
81080	53.222	134.401	20.8796	1.06189	.24702	0.000	.24725	.15
81079	53.219	134.180	20.8863	.96622	.24709	0.000	.24741	.11
81078	53.210	134.994	20.8614	1.26674	.24647	0.000	.24647	.12
81077	53.203	134.748	20.8688	1.16220	.24677	.001	.24687	.16
81076	66.735	134.363	21.0553	1.06149	.25355	.001	.25381	.08
81075	66.733	135.047	21.0352	1.37460	.25389	.004	.25387	.41
81074	66.732	134.838	21.0413	1.26622	.25306	0.000	.25313	.03
81073	66.731	134.711	21.0450	1.16176	.25338	0.000	.25350	.12

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 155 K W/m.K	Conductivity deviation from correlation percent
81024	.951	156.011	19.2625	1.05211	.19721	.001	.19698	.20
81023	.950	155.629	19.2771	.94894	.19766	.001	.19752	.23
81022	.950	155.403	19.2858	.85082	.19783	.001	.19774	.21
81021	.948	155.076	19.2982	.75849	.19815	.001	.19813	.21
81020	13.362	156.240	19.5215	1.15979	.20547	.001	.20517	.11
81019	13.368	155.886	19.5342	1.05120	.20589	.001	.20568	.15
81018	13.365	155.578	19.5451	.94788	.20601	.001	.20587	.07
81017	13.371	155.271	19.5561	.85014	.20655	.001	.20648	.19
81016	27.360	156.006	19.7976	1.15866	.21455	.001	.21430	.05
81015	27.335	155.801	19.8039	1.04995	.21483	.001	.21463	.10
81014	27.358	155.382	19.8182	.94674	.21534	.001	.21524	.16
81013	27.345	155.255	19.8222	.84912	.21546	.001	.21539	.17
81012	40.840	155.870	20.0346	1.15800	.22250	.001	.22227	-.07
81011	40.845	155.644	20.0417	1.04989	.22309	.001	.22292	.11
81010	40.853	155.268	20.0537	.94635	.22315	.001	.22308	-.00
81009	40.866	155.129	20.0582	.84880	.22345	.001	.22342	.08

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 175 K W/m.K	deviation from correlation percent
81008	53.815	156.283	20.2280	1.27105	.22987	0.000	.22952	.09
81007	53.813	155.908	20.2392	1.15699	.23018	.001	.22993	.09
81006	53.813	155.688	20.2458	1.04892	.23056	.001	.23037	.18
81005	53.808	155.405	20.2542	.94565	.23066	.001	.23055	.12
81004	67.356	156.172	20.4315	1.27085	.23758	.001	.23725	.20
81003	67.356	155.796	20.4422	1.15668	.23770	.001	.23747	.13
81002	67.352	155.602	20.4477	1.04875	.23814	.001	.23797	.25
81001	67.348	155.390	20.4538	.94524	.23802	.001	.23791	.13

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 175 K W/m.K	deviation from correlation percent
81048	1.019	175.465	18.5019	.97794	.17714	.001	.17706	-.20
81047	1.018	175.148	18.5146	.87206	.17754	.001	.17751	-.16
81046	1.014	174.727	18.5314	.77209	.17816	.001	.17821	-.04
81045	1.013	174.391	18.5448	.67870	.17852	.001	.17863	-.03
81044	13.930	175.765	18.8323	1.08985	.18721	0.000	.18707	-.10
81043	13.927	175.298	18.8492	.97715	.18733	.001	.18728	-.27
81042	13.923	174.912	18.8631	.87128	.18770	.001	.18772	-.26
81041	13.916	174.645	18.8726	.77168	.18813	.001	.18819	-.16
81040	27.796	175.447	19.1589	1.08822	.19703	0.000	.19695	-.26
81039	27.794	175.218	19.1665	.97629	.19726	.001	.19722	-.24
81038	27.798	174.668	19.1850	.87053	.19783	.001	.19789	-.20
81037	27.797	174.450	19.1923	.77088	.19822	.001	.19832	-.10
81036	41.317	175.339	19.4336	1.08796	.20591	.001	.20584	-.27
81035	41.317	174.999	19.4442	.97617	.20635	.001	.20635	-.19
81034	41.317	174.650	19.4551	.87058	.20681	.001	.20688	-.11
81033	41.310	174.355	19.4642	.77100	.20717	.001	.20730	-.06
81032	53.962	175.581	19.6560	1.20648	.21372	.001	.21360	-.13
81031	53.957	175.267	19.6652	1.08805	.21395	.001	.21390	-.14
81030	53.955	175.004	19.6730	.97625	.21426	.001	.21426	-.10
81029	53.949	174.706	19.6817	.87025	.21430	.001	.21436	-.19
81028	66.405	175.540	19.8657	1.20471	.22104	.001	.22093	-.11
81027	66.399	175.276	19.8731	1.08657	.22136	.001	.22130	-.06
81026	66.379	174.808	19.8850	.97479	.22167	.001	.22171	-.08
81025	66.377	174.635	19.8909	.86914	.22202	.001	.22210	.02

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 195 K W/m.K	deviation from correlation percent
80040	.950	195.294	17.6766	.87502	.15772	.001	.15768	-.08
80039	.949	194.868	17.6949	.76891	.15803	.001	.15805	-.15
80038	.948	194.550	17.7085	.67000	.15849	.001	.15855	-.05
80037	.947	194.219	17.7227	.57768	.15892	.001	.15903	.02
80036	14.520	195.460	18.1208	.98654	.16938	.001	.16931	-.25
80035	14.520	195.134	18.1330	.87347	.17005	.001	.17003	-.03
80034	14.521	194.717	18.1487	.76785	.17051	.001	.17055	.02
80033	14.520	194.349	18.1625	.66885	.17075	.001	.17084	-.03
80032	27.378	195.334	18.4779	.98607	.17982	.001	.17977	-.08
80031	27.372	194.895	18.4927	.87365	.18035	.001	.18037	.01
80030	27.368	194.640	18.5013	.76780	.18052	.001	.18057	-.01
80029	27.363	194.243	18.5147	.66881	.18098	.001	.18109	.06
80028	39.331	195.664	18.7522	1.10423	.18798	.001	.18788	-.11
80027	39.325	195.269	18.7646	.98474	.18860	.001	.18856	.05
80026	39.325	194.871	18.7773	.87231	.18888	.001	.18890	.02
80025	39.318	194.474	18.7897	.76704	.18934	.001	.18942	.10
80024	53.388	195.893	19.0434	1.23022	.19732	.001	.19719	.03
80023	53.388	195.491	19.0553	1.10390	.19762	.001	.19755	.02
80022	53.386	195.045	19.0685	.98461	.19809	.001	.19808	.08
80021	53.379	194.639	19.0804	.87217	.19842	.001	.19847	.09
80020	67.210	195.695	19.3123	1.23013	.20594	.001	.20584	.02
80019	67.208	195.277	19.3240	1.10370	.20610	STAT	.20606	-.06
80018	67.210	194.985	19.3322	.98419	.20646	.001	.20646	.00
80017	67.215	194.585	19.3435	.87159	.20692	.001	.20698	.07
80016	.926	195.273	17.6766	.87406	.15702	.001	.15698	-.52
80015	.926	194.811	17.6965	.76831	.15755	.001	.15758	-.47
80014	.926	194.391	17.7145	.66929	.15794	.001	.15803	-.48
80013	.926	194.165	17.7242	.57725	.15832	.001	.15844	-.38
80012	11.514	195.518	18.0269	.98613	.16633	0.000	.16626	-.54
80011	11.513	195.096	18.0432	.87354	.16677	.001	.16676	-.50
80010	11.503	194.602	18.0619	.76784	.16740	.001	.16746	-.39
80009	11.498	194.370	18.0707	.66893	.16741	.001	.16750	-.51
80008	20.838	195.405	18.3032	.98625	.17422	.001	.17416	-.41
80007	20.835	195.011	18.3172	.87366	.17463	.001	.17463	-.37
80006	20.837	194.625	18.3311	.76796	.17514	.001	.17519	-.27
80005	20.831	194.297	18.3426	.66887	.17518	.001	.17528	-.41
80004	29.520	195.695	18.5194	1.10534	.18063	.001	.18053	-.33
80003	29.517	195.272	18.5336	.98565	.18099	.001	.18095	-.33
80002	29.510	194.914	18.5455	.87292	.18151	.001	.18152	-.21
80001	29.503	194.507	18.5590	.76735	.18201	.001	.18208	-.12

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 215 K W/m.K	Conductivity deviation from correlation percent
80064	1.071	215.119	16.7880	.74791	.13923	.001	.13921	.22
80063	1.071	214.672	16.8092	.64502	.13935	.001	.13939	-.00
80062	1.070	214.330	16.8253	.54983	.13992	.001	.14001	.18
80061	1.069	213.891	16.8459	.46250	.14007	.002	.14022	-.01
80060	14.225	215.378	17.3438	.85777	.15184	.001	.15179	-.20
80059	14.224	214.926	17.3617	.74742	.15242	.001	.15243	-.07
80058	14.221	214.510	17.3780	.64467	.15276	.001	.15282	-.07
80057	14.219	214.110	17.3937	.54978	.15299	.002	.15311	-.14
80056	27.594	215.508	17.7876	.97548	.16312	.001	.16306	-.22
80055	27.590	215.106	17.8015	.85729	.16372	.001	.16371	-.05
80054	27.587	214.652	17.8173	.74706	.16404	.001	.16408	-.07
80053	27.588	214.335	17.8284	.64436	.16445	.001	.16453	.02
80052	40.919	215.396	18.1631	.97439	.17357	.001	.17352	-.04
80051	40.926	215.020	18.1752	.85649	.17343	.001	.17343	-.29
80050	40.929	214.622	18.1880	.74633	.17414	.001	.17419	-.06
80049	40.933	214.260	18.1996	.64372	.17447	.001	.17456	-.03
80048	53.959	215.637	18.4712	1.09933	.18253	.001	.18245	.05
80047	53.960	215.290	18.4815	.97363	.18275	.001	.18272	.02
80046	53.957	214.860	18.4941	.85612	.18337	.001	.18339	.19
80045	53.951	214.434	18.5066	.74606	.18361	.001	.18368	.15
80044	67.543	215.446	18.7687	1.09909	.19185	.001	.19180	.31
80043	67.543	214.923	18.7832	.97406	.19211	.001	.19212	.24
80042	67.544	214.749	18.7880	.85595	.19233	.001	.19236	.29
80041	67.539	214.269	18.8013	.74590	.19230	.001	.19238	.09

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 225 K W/m.K	Conductivity deviation from correlation percent
83032	.282	226.278	.1580	.08368	.01371	.003	.01358	1.54
83031	.282	225.462	.1586	.06638	.01358	.004	.01353	1.21
83030	.282	224.462	.1595	.05111	.01347	.005	.01353	1.16
83029	.282	223.753	.1601	.03786	.01348	.008	.01361	1.76
83028	.401	223.604	.2343	.03786	.01359	.008	.01374	1.46
83027	.406	226.046	.2339	.08364	.01388	.003	.01377	1.71
83026	.409	225.279	.2365	.06637	.01380	.004	.01377	1.67
83025	.411	224.256	.2395	.05109	.01373	.005	.01381	1.89

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 235 K W/m.K	Conductivity deviation from correlation percent
83044	.270	232.979	.1461	.02789	.01411	.012	.01433	-.54
83043	.270	235.295	.1445	.06957	.01446	.003	.01443	.19
83042	.271	234.388	.1455	.05358	.01433	.005	.01440	-.05
83041	.271	233.661	.1460	.03970	.01425	.007	.01439	-.07
83040	.409	235.876	.2234	.08767	.01474	.003	.01465	.49
83039	.412	235.098	.2264	.06958	.01463	.004	.01462	.26
83038	.415	234.239	.2287	.05357	.01451	.005	.01459	.04
83037	.417	233.532	.2311	.03970	.01446	.007	.01462	.18
83036	.602	235.696	.3422	.08761	.01506	.003	.01499	.99
83035	.606	234.802	.3463	.06955	.01496	.003	.01498	.90
83034	.609	234.098	.3498	.05356	.01489	.005	.01499	.89
83033	.613	233.468	.3535	.03967	.01481	.007	.01497	.75
79076	1.736	235.623	15.7923	.71227	.12104	.001	.12095	.16
79075	1.736	235.120	15.8194	.60752	.12156	.001	.12154	.21
79074	1.736	234.698	15.8427	.51087	.12180	.002	.12184	.09
79073	14.814	235.837	16.5361	.82604	.13584	.001	.13573	-.20
79072	14.808	235.390	15.5545	.71237	.13610	.001	.13605	-.26
79071	14.807	234.896	16.5751	.60772	.13645	.002	.13646	-.29
79070	14.795	234.395	16.5955	.51085	.13631	.002	.13639	-.67
79069	29.749	236.015	17.1375	.94638	.14932	.001	.14919	-.30
79068	29.748	235.493	17.1559	.82469	.14983	.001	.14977	-.21
79067	29.745	235.039	17.1718	.71143	.14997	.001	.14997	-.33
79066	29.742	234.575	17.1881	.60694	.15037	.002	.15042	-.28
79065	46.685	235.715	17.6800	.94607	.16310	.001	.16302	-.00
79064	46.681	235.230	17.6950	.82458	.16314	.001	.16311	-.18
79063	46.680	234.817	17.7077	.71142	.16344	.001	.16346	-.17
79062	46.674	234.553	17.7157	.60633	.16334	.001	.16339	-.34
79061	67.096	235.860	18.1935	1.07469	.17702	0.000	.17693	.14
79060	57.093	235.408	18.2060	.94483	.17730	.001	.17726	.13
79059	67.096	235.000	18.2173	.82353	.17776	.001	.17776	.24
79058	67.099	234.578	18.2291	.71059	.17815	.001	.17819	.29

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 245 K W/m.K	Conductivity deviation from correlation percent
83012	.294	246.118	.1499	.09166	.01548	.003	.01536	-.94
83011	.294	245.283	.1505	.07274	.01537	.004	.01534	-1.07
83010	.294	244.378	.1511	.05604	.01525	.005	.01532	-1.21
83009	.295	243.664	.1520	.04152	.01525	.008	.01540	-.71
83008	.481	245.875	.2526	.09162	.01578	.003	.01568	-.28
83007	.481	245.065	.2536	.07272	.01553	.004	.01552	-1.33
83006	.481	244.183	.2548	.05602	.01558	.005	.01567	-.39
83005	.481	243.466	.2557	.04151	.01541	.008	.01558	-1.00
83004	.633	245.735	.3420	.09175	.01590	.004	.01582	-.66
83003	.636	244.967	.3449	.07281	.01582	.004	.01582	-.67
83002	.641	244.153	.3495	.05609	.01576	.006	.01585	-.56
83001	.645	243.571	.3529	.04155	.01569	.009	.01585	-.63

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 255 K W/m.K	Conductivity deviation from correlation percent
83024	.309	253.199	.1529	.03051	.01610	.014	.01630	-1.96
83023	.309	255.368	.1514	.07604	.01630	.005	.01626	-2.21
83022	.309	254.535	.1520	.05859	.01629	.006	.01634	-1.69
83021	.309	253.732	.1525	.04342	.01614	.008	.01628	-2.07
83020	.708	255.761	.3667	.09572	.01701	.003	.01692	-.98
83019	.708	254.898	.3684	.07602	.01693	.004	.01694	-.90
83018	.708	254.158	.3698	.05855	.01684	.005	.01693	-.96
83017	.708	253.565	.3710	.04340	.01672	.009	.01688	-1.29
83016	1.082	253.366	.6071	.04338	.01750	.008	.01768	.37
83015	1.084	255.373	.6003	.09570	.01769	.003	.01765	.26
83014	1.087	254.680	.6050	.07596	.01765	.004	.01769	.41
83013	1.090	253.937	.6101	.05851	.01757	.005	.01769	.37
79101	2.677	254.449	14.7729	.77306	.10645	.001	.10654	.85
79100	2.669	253.940	14.8043	.65908	.10696	.001	.10713	.92
79099	2.661	253.325	14.8424	.55441	.10729	.002	.10756	.73
79098	2.651	252.902	14.8678	.45869	.10731	.002	.10764	.42
79097	12.529	254.110	15.6003	.77181	.11972	.001	.11985	-.17
79096	12.525	253.594	15.6242	.65828	.12022	.001	.12043	-.06
79095	12.519	253.101	15.6469	.55377	.12081	.002	.12110	.14
79094	12.521	252.573	15.6718	.45844	.12085	.002	.12121	-.14
79093	20.228	254.403	16.0343	.89508	.12799	.001	.12808	-.23
79092	20.224	253.858	16.0565	.77210	.12823	.001	.12839	-.33
79091	20.226	253.388	16.0759	.65844	.12861	.001	.12884	-.28
79090	20.222	252.994	16.0918	.55379	.12921	.002	.12950	-.02
79089	33.115	254.159	16.6240	.89381	.14045	.001	.14056	-.01
79088	33.115	253.660	16.6415	.77110	.14054	.001	.14072	-.17
79087	33.115	253.187	16.6581	.65770	.14081	.002	.14105	-.19
79086	33.120	253.031	16.6638	.60428	.14107	.001	.14133	-.08
79085	48.192	254.116	17.1549	.95846	.15268	.001	.15278	.20
79084	48.194	253.881	17.1622	.89373	.15305	.001	.15318	.35
79083	48.194	253.385	17.1776	.77139	.15326	.001	.15345	.29
79082	48.188	253.005	17.1891	.65775	.15335	.001	.15358	.20
79081	67.252	254.209	17.6909	1.02500	.16612	.001	.16620	.46
79080	67.252	253.703	17.7048	.89360	.16646	.001	.16659	.48
79079	67.252	253.193	17.7188	.77097	.16670	.001	.16688	.45
79078	67.252	252.879	17.7275	.65739	.16692	.001	.16713	.46

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 265 K W/m.K	Conductivity deviation from correlation percent
82065	.249	265.102	.1162	.07917	.01731	.004	.01730	-2.20
82064	.249	264.337	.1166	.06099	.01722	.005	.01730	-2.22
82063	.249	263.542	.1169	.04521	.01710	.008	.01727	-2.40
82062	.249	262.977	.1172	.03177	.01706	.012	.01729	-2.25
82061	.482	265.752	.2306	.09969	.01757	.006	.01748	-2.55
82060	.482	264.908	.2315	.07915	.01759	.004	.01760	-1.88
82059	.482	264.097	.2323	.06098	.01746	.006	.01756	-2.10
82058	.482	263.393	.2331	.04518	.01744	.009	.01762	-1.76
82057	.853	265.436	.4294	.09962	.01819	.003	.01814	-1.24
82056	.853	264.620	.4312	.07912	.01806	.004	.01810	-1.46
82055	.853	263.885	.4328	.06095	.01796	.006	.01809	-1.57
82054	.853	263.258	.4343	.04519	.01788	.008	.01808	-1.63
82053	1.153	265.203	.6079	.09964	.01864	.005	.01862	-.74
82052	1.155	264.354	.6123	.07915	.01858	.004	.01865	-.59
82051	1.158	263.693	.6169	.06097	.01852	.006	.01867	-.56
82050	1.161	263.140	.6205	.04519	.01846	.010	.01867	-.58
82049	1.523	264.825	.8596	.09966	.01961	.003	.01963	1.65
82048	1.525	264.132	.8662	.07913	.01959	.005	.01969	1.87
82047	1.528	263.478	.8724	.06097	.01949	.006	.01966	1.68

82046	1.532	262.955	.8792	.04517	.01943	.009	.01966	1.60

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 275 K W/m.K	Conductivity deviation from correlation percent
82089	.330	275.153	.1489	.08240	.01842	.003	.01840	-3.11
82088	.330	274.297	.1494	.06351	.01838	.006	.01847	-2.72
82087	.330	273.611	.1498	.04708	.01828	.008	.01846	-2.79
82086	.330	273.020	.1502	.03310	.01801	.014	.01827	-3.89
82085	.698	275.662	.3276	.10373	.01901	.003	.01892	-2.40
82084	.698	274.744	.3289	.08241	.01887	.004	.01890	-2.52
82083	.698	274.038	.3300	.06348	.01879	.005	.01892	-2.46
82082	.698	273.395	.3310	.04706	.01870	.009	.01891	-2.50
82081	1.037	275.327	.5085	.10372	.01952	.003	.01948	-1.61
82080	1.037	274.544	.5105	.08239	.01940	.004	.01946	-1.71
82079	1.037	273.897	.5123	.06347	.01923	.005	.01938	-2.16
82078	1.037	273.274	.5139	.04707	.01916	.008	.01939	-2.10
82077	1.299	275.168	.6601	.10370	.01989	.002	.01987	-1.37
82076	1.302	274.374	.6651	.08236	.01984	.004	.01993	-1.12
82075	1.312	273.772	.6736	.06347	.01976	.005	.01993	-1.20
82074	1.316	273.259	.6782	.04705	.01971	.010	.01995	-1.14
82073	1.609	275.682	.8548	.12757	.02065	.002	.02055	-.21
82072	1.513	274.976	.8613	.10375	.02059	.003	.02059	-.08
82071	1.618	274.238	.8690	.08240	.02049	.004	.02060	-.13
82070	1.619	273.649	.8735	.06349	.02044	.006	.02064	-.01
82069	2.062	275.238	1.1950	.12754	.02212	.003	.02208	3.05
82068	2.064	274.610	1.2038	.10376	.02217	.003	.02223	3.61
82067	2.066	273.904	1.2134	.08240	.02211	.004	.02228	3.73
82066	2.069	273.369	1.2219	.06347	.02206	.006	.02232	3.79
79026	4.962	276.523	13.5345	.71938	.09236	.001	.09207	1.38
79025	4.960	275.924	13.5805	.60512	.09274	.001	.09256	1.25
79024	4.959	275.201	13.6355	.50102	.09356	.001	.09352	1.47
79023	4.959	274.611	13.6802	.40657	.09396	.002	.09403	1.36
79022	4.959	274.197	13.7111	.32204	.09437	.002	.09452	1.42
79021	11.792	276.148	14.4292	.71955	.10374	.001	.10353	-.03
79020	11.792	275.546	14.4620	.60527	.10407	.001	.10397	-.10
79019	11.793	274.955	14.4941	.50101	.10455	.001	.10456	-.01
79018	11.792	274.440	14.5218	.40662	.10503	.002	.10513	.13
79017	19.380	275.840	15.0666	.71948	.11352	.001	.11338	-.38
79016	19.382	275.289	15.0913	.60514	.11381	.001	.11376	-.40
79015	19.381	274.798	15.1131	.50085	.11423	.001	.11426	-.28
79014	19.381	274.335	15.1336	.40639	.11455	.002	.11466	-.24
79013	32.560	274.466	15.8752	.50075	.12802	.002	.12810	-.11
79012	32.562	276.141	15.8144	.84290	.12681	.001	.12664	-.37
79011	32.561	275.511	15.8373	.71910	.12724	.001	.12716	-.29
79010	32.558	274.956	15.8573	.60468	.12762	.001	.12763	-.22
79009	48.703	276.942	16.4646	1.11881	.14024	.001	.13998	.08
79008	48.703	276.326	16.4837	.97549	.14060	.001	.14042	.11
79007	48.701	275.745	16.5017	.84178	.14085	.001	.14075	.08
79006	48.699	275.265	16.5165	.71801	.14112	.001	.14108	.10
79005	65.593	277.211	17.0107	1.27276	.15281	.001	.15256	.68
79004	65.593	276.677	17.0254	1.11946	.15320	.001	.15301	.76
79003	65.619	276.110	17.0419	.97570	.15345	.001	.15332	.73
79002	65.618	275.551	17.0573	.84216	.15375	.001	.15369	.74
79001	65.622	275.160	17.0682	.71829	.15423	.001	.15421	.92

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 285 K W/m.K	Conductivity deviation from correlation percent
82021	.247	286.164	.1060	.10764	.01960	.002	.01945	-3.71
82020	.247	285.222	.1064	.08552	.01953	.003	.01950	-3.44
82019	.247	284.404	.1070	.06589	.01937	.005	.01945	-3.73
82018	.248	283.648	.1075	.04884	.01933	.006	.01951	-3.42
82017	.821	283.344	.3772	.04886	.01991	.008	.02013	-3.45
82016	.821	285.524	.3735	.10768	.02019	.003	.02012	-3.48
82015	.821	284.734	.3749	.08552	.02003	.003	.02007	-3.77
82014	.821	284.032	.3763	.06589	.02010	.005	.02023	-2.94
82013	1.449	283.715	.7163	.06590	.02081	.005	.02099	-3.31
82012	1.449	285.881	.7077	.13239	.02116	.002	.02103	-2.99
82011	1.450	285.110	.7112	.10767	.02112	.002	.02110	-2.70
82010	1.450	284.391	.7142	.08552	.02103	.003	.02112	-2.68
82009	2.190	286.150	1.1884	.15950	.02301	.002	.02283	-.67
82008	2.191	285.324	1.1964	.13229	.02298	.002	.02293	-.32
82007	2.191	284.054	1.2088	.08545	.02292	.002	.02307	.14
82006	2.192	283.033	1.2194	.04883	.02274	.007	.02305	-.06
82005	2.193	284.680	1.2041	.10762	.02288	.003	.02293	-.41
82004	2.779	285.413	1.7119	.15957	.02565	.002	.02557	3.80
82003	2.779	284.073	1.7403	.10766	.02585	.003	.02603	5.11
82002	2.779	286.061	1.6992	.18939	.02562	.002	.02542	3.39
82001	2.779	284.671	1.7274	.13232	.02573	.003	.02579	4.42

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 295 K W/m.K	Conductivity deviation from correlation percent
82045	.289	296.023	.1200	.11166	.02080	.003	.02057	-4.10
82044	.289	295.044	.1205	.08871	.02068	.005	.02067	-4.06
82043	.289	294.331	.1208	.06833	.02045	.007	.02054	-4.76
82042	.289	293.565	.1211	.05070	.02046	.010	.02065	-4.20
82041	.855	296.326	.3729	.13725	.02145	.003	.02127	-4.18
82040	.855	295.392	.3743	.11167	.02131	.004	.02126	-4.27
82039	.855	294.709	.3754	.08866	.02132	.004	.02136	-3.79
82038	.855	293.982	.3766	.06833	.02120	.007	.02134	-3.92
82037	1.378	295.892	.6337	.13730	.02208	.002	.02196	-4.15
82036	1.384	295.161	.6392	.11166	.02199	.003	.02197	-4.17
82035	1.384	294.429	.6415	.08869	.02194	.005	.02202	-3.96
82034	1.388	293.742	.6458	.06837	.02168	.006	.02185	-4.80
82033	2.118	293.441	1.0786	.06835	.02322	.006	.02345	-3.14
82032	2.121	295.410	1.0666	.13724	.02341	.002	.02335	-3.44
82031	2.123	294.658	1.0730	.11166	.02335	.003	.02340	-3.30
82030	2.125	294.060	1.0791	.08867	.02328	.005	.02342	-3.29
82029	2.967	295.407	1.7078	.16546	.02621	.002	.02614	-1.08
82028	2.971	294.702	1.7235	.13724	.02632	.003	.02637	-.42
82027	2.973	294.072	1.7366	.11162	.02621	.004	.02637	-.61
82026	2.975	293.616	1.7478	.08864	.02640	.006	.02665	.25
82025	3.508	293.665	2.3689	.11153	.03067	.005	.03097	4.99
82024	3.508	294.579	2.3308	.16532	.03027	.003	.03036	3.73
82023	3.508	294.115	2.3498	.13714	.03040	.004	.03060	4.15
82022	3.508	295.195	2.3072	.19617	.03002	.002	.02998	2.89
83068	.311	296.227	.1293	.11175	.02083	.003	.02067	-4.19
83067	.311	295.398	.1297	.08875	.02063	.006	.02058	-4.66
83066	.311	294.659	.1303	.06841	.02060	.010	.02064	-4.33
83065	.311	293.906	.1307	.05073	.02051	.011	.02065	-4.29
83064	.840	293.702	.3698	.05071	.02116	.008	.02133	-3.85
83063	.840	295.810	.3667	.11172	.02139	.003	.02128	-4.06
83062	.840	295.059	.3678	.08875	.02127	.005	.02126	-4.18
83061	.840	294.373	.3689	.06840	.02115	.007	.02123	-4.32
83060	1.364	293.470	.6337	.05071	.02174	.009	.02195	-4.18
83059	1.364	295.500	.6275	.11172	.02205	.003	.02198	-3.96
83058	1.364	294.790	.6297	.08877	.02185	.005	.02188	-4.47
83057	1.364	294.083	.6319	.06841	.02189	.006	.02202	-3.85
83056	2.144	293.755	1.0935	.06840	.02326	.006	.02345	-3.37
83055	2.145	295.763	1.0795	.13732	.02347	.003	.02336	-3.58
83054	2.145	294.979	1.0851	.11176	.02343	.003	.02343	-3.32
83053	2.145	294.412	1.0892	.08877	.02346	.006	.02355	-2.87
83052	2.923	293.954	1.6925	.08874	.02594	.005	.02612	-.91
83051	2.923	295.783	1.6618	.16559	.02593	.002	.02580	-1.72
83050	2.923	295.168	1.6722	.13732	.02599	.003	.02596	-1.23
83049	2.924	294.546	1.6830	.11177	.02579	.005	.02587	-1.75
83048	3.389	295.866	2.1327	.19658	.02872	.002	.02855	1.01
83047	3.389	295.244	2.1518	.16564	.02882	.002	.02877	1.46
83046	3.389	294.681	2.1696	.13739	.02883	.003	.02890	1.59
83045	3.390	294.168	2.1874	.11170	.02901	.004	.02918	2.27
79057	5.509	295.599	11.8597	.64928	.07877	.001	.07862	2.60
79056	5.506	295.240	11.9018	.59221	.07918	.001	.07912	2.76
79055	5.503	294.776	11.9560	.53771	.07939	.001	.07945	2.55
79054	5.501	294.211	12.0213	.43623	.07998	.001	.08017	2.71
79053	5.500	293.548	12.0963	.34553	.08040	.001	.08075	2.55
79052	11.965	296.074	13.2849	.70935	.09160	.001	.09137	-.28
79051	11.967	295.642	13.3122	.64959	.09177	.001	.09163	-.36
79050	11.969	294.974	13.3544	.53758	.09202	.001	.09203	-.51
79049	11.968	294.359	13.3925	.43631	.09221	.001	.09234	-.68
79048	11.970	293.856	13.4239	.34567	.09279	.001	.09303	-.37
79047	18.846	296.312	14.0700	.77164	.10134	.001	.10108	-.96
79046	18.846	295.386	14.1150	.64960	.10167	.001	.10159	-1.08
79045	18.848	294.831	14.1420	.53763	.10204	.001	.10207	-.98
79044	18.848	294.201	14.1725	.43637	.10246	.001	.10262	-.88
79043	18.848	293.719	14.1957	.34570	.10245	.001	.10270	-1.12
79042	25.885	295.782	14.6650	.77211	.10975	.001	.10960	-1.16
79041	25.885	295.166	14.6905	.64959	.11008	.001	.11005	-1.11
79040	25.882	294.560	14.7154	.53763	.11021	.001	.11029	-1.24
79039	25.885	293.962	14.7404	.43660	.11078	.002	.11097	-.97
79038	35.690	296.260	15.2488	.90500	.11973	.001	.11951	-.67
79037	35.692	295.539	15.2747	.77215	.11970	.001	.11961	-.96
79036	35.689	294.984	15.2944	.64964	.12055	.001	.12055	-.44
79035	35.690	294.374	15.3162	.53783	.12017	.001	.12028	-.98
79034	49.708	296.694	15.8916	1.04823	.13148	0.000	.13122	-.32
79033	49.709	295.818	15.9187	.90523	.13187	.001	.13174	-.29
79032	49.709	295.280	15.9353	.77225	.13213	.001	.13209	-.26
79031	49.704	294.618	15.9556	.65007	.13224	.001	.13230	-.39
79030	66.761	296.067	16.5290	1.04916	.14458	.001	.14444	.41
79029	66.763	295.429	16.5465	.90547	.14492	.001	.14486	.46
79028	66.770	294.891	16.5614	.77260	.14512	.001	.14513	.44
79027	66.775	294.396	16.5750	.65002	.14553	.001	.14561	.58

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 305 K W/m.K	Conductivity deviation from correlation percent
84041	.241	302.965	.0974	.05229	.02218	.012	.02239	-1.26
84040	.241	303.561	.0972	.07051	.02206	.006	.02220	-2.11
84039	.241	304.449	.0969	.09148	.02196	.004	.02201	-3.01
84038	.241	305.309	.0967	.11522	.02221	.004	.02218	-2.20
84037	.639	302.718	.2667	.05234	.02232	.009	.02255	-2.43
84036	.639	303.335	.2660	.07058	.02250	.004	.02266	-1.92
84035	.639	304.854	.2645	.11516	.02256	.003	.02257	-2.30
84034	.639	304.006	.2653	.09141	.02252	.005	.02261	-2.14
84033	.959	305.696	.4057	.14194	.02307	.002	.02298	-2.06
84032	.959	302.745	.4107	.05236	.02250	.007	.02271	-3.31
84031	.959	303.313	.4097	.07062	.02266	.005	.02281	-2.86
84030	.959	304.074	.4085	.09161	.02276	.003	.02284	-2.74
84029	.959	304.938	.4070	.11521	.02286	.002	.02286	-2.59
84028	1.521	306.007	.6757	.17088	.02395	.002	.02380	-1.59
84027	1.521	303.238	.6847	.07048	.02346	.005	.02359	-2.57
84026	1.521	305.362	.6778	.14166	.02382	.002	.02380	-1.60
84025	1.521	304.514	.6805	.11508	.02375	.003	.02378	-1.74
84023	1.849	306.272	.8467	.16998	.02458	.002	.02437	-1.18
84022	1.849	305.761	.8489	.14114	.02453	.002	.02443	-.98
84021	1.849	304.422	.8549	.11424	.02426	.003	.02428	-1.64
84020	1.849	304.209	.8559	.09110	.02423	.004	.02427	-1.73
84019	1.849	303.597	.8587	.07045	.02375	.005	.02383	-3.61
84018	1.858	303.292	.8649	.07049	.02418	.005	.02429	-1.74
84017	1.858	305.293	.8557	.14152	.02422	.002	.02422	-1.93
84016	1.858	304.494	.8594	.11501	.02402	.003	.02404	-2.73
84015	1.858	303.861	.8623	.09133	.02397	.003	.02403	-2.80
84014	2.501	306.756	1.2260	.20287	.02581	.001	.02547	-1.36
84013	2.501	304.906	1.2410	.14143	.02547	.001	.02547	-1.56
84012	2.501	304.332	1.2457	.11507	.02541	.002	.02541	-1.86
84011	2.501	306.052	1.2316	.17100	.02556	.001	.02537	-1.81
84010	3.157	304.396	1.7239	.11553	.02762	.003	.02756	-.03
84009	3.157	304.645	1.7200	.14152	.02764	.002	.02760	.16
84008	3.157	305.885	1.7012	.20246	.02767	.001	.02750	.07
84007	3.157	305.553	1.7062	.17096	.02769	.002	.02765	.53
84006	3.792	305.536	2.3036	.20253	.03126	.001	.03125	3.76
84005	3.792	307.396	2.2495	.27562	.03122	.001	.03046	2.12
84004	3.793	306.273	2.2819	.23720	.03110	.001	.03071	2.40
84003	3.793	304.935	2.3226	.17072	.03110	.002	.03108	2.93
84002	3.793	304.128	2.3487	.11533	.03146	.002	.03125	3.05
84001	3.793	303.535	2.3686	.09152	.03144	.004	.03117	2.47

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 312 K W/m.K	Conductivity deviation from correlation percent
85165	.117	315.524	.0448	.11631	.02283	.003	.02240	-4.76
85164	.117	314.484	.0451	.09234	.02282	.004	.02252	-4.23
85163	.117	313.667	.0452	.07116	.02269	.007	.02249	-4.37
85162	.121	312.814	.0468	.05268	.02218	.007	.02208	-6.31
85161	.637	314.792	.2542	.11629	.02394	.003	.02361	-1.68
85160	.637	313.738	.2551	.09234	.02384	.005	.02363	-1.58
85159	.638	313.154	.2558	.07106	.02369	.006	.02355	-1.93
85158	.638	312.499	.2566	.05262	.02361	.006	.02355	-1.95
85157	1.076	314.460	.4438	.11626	.02441	.003	.02412	-1.59
85156	1.077	313.728	.4453	.09230	.02424	.003	.02404	-1.97
85155	1.077	313.012	.4466	.07111	.02405	.005	.02393	-2.43
85154	1.077	312.439	.4478	.05266	.02406	.010	.02401	-2.11
85153	1.919	314.805	.8468	.14291	.02553	.002	.02522	-1.74
85152	1.919	313.965	.8503	.11610	.02525	.002	.02503	-2.54
85151	1.923	313.310	.8555	.09216	.02526	.003	.02511	-2.27
85150	1.924	312.571	.8589	.07098	.02487	.005	.02481	-3.58
85149	2.577	314.525	1.2135	.14298	.02669	.002	.02643	-1.53
85148	2.573	313.751	1.2166	.11619	.02660	.002	.02642	-1.62
85147	2.573	313.090	1.2215	.09223	.02654	.003	.02642	-1.65
85146	2.573	312.484	1.2262	.07101	.02653	.005	.02648	-1.51
85145	3.121	314.137	1.5666	.14292	.02805	.002	.02785	-1.00
85144	3.121	313.535	1.5736	.11620	.02788	.002	.02773	-1.52
85143	3.121	312.497	1.5859	.07109	.02795	.005	.02790	-1.08
85142	3.121	312.873	1.5814	.09217	.02792	.003	.02784	-1.26
85141	3.872	314.577	2.1494	.17260	.03083	.002	.03066	-.17
85140	3.872	313.834	2.1661	.14295	.03085	.002	.03072	-.24
85139	3.872	313.183	2.1811	.11618	.03069	.003	.03061	-.87
85138	3.870	312.670	2.1911	.09223	.03062	.003	.03057	-1.15
85137	4.016	314.380	2.2883	.17247	.03148	.002	.03134	-.28
85136	4.016	313.708	2.3058	.14289	.03142	.003	.03131	-.66
85135	4.016	313.054	2.3233	.11610	.03121	.003	.03114	-1.52
85134	4.016	309.155	2.4402	.09312	.03205	.004	.03234	.26
85133	4.556	311.722	3.0285	.03729	.03484	.014	.03485	-3.30

85132	4.556	312.873	2.9648	.11682	.03550	.003	.03548	-.21
85131	4.556	311.752	3.0268	.05298	.03528	.011	.03529	-1.98
85130	4.556	312.101	3.0069	.07148	.03539	.007	.03539	-1.30
85129	4.556	312.375	2.9917	.09266	.03504	.004	.03503	-2.03
85128	4.749	312.983	3.2522	.11708	.03728	.003	.03728	-.98
85126	4.749	312.000	3.3247	.03746	.03699	.018	.03699	-3.30
85125	4.749	311.899	3.3326	.05311	.03829	.011	.03829	.05
85124	4.748	312.323	3.2994	.07179	.03831	.007	.03831	.77
85123	4.750	316.546	3.0395	.09254	.03693	.005	.03700	2.50
85122	4.898	312.203	3.5946	.09236	.03966	.005	.03966	-1.89
85121	4.908	313.324	3.5090	.17236	.03903	.002	.03907	-1.60
85120	4.908	312.858	3.5518	.14290	.03945	.003	.03947	-1.46
85119	4.908	312.449	3.5915	.11610	.03941	.003	.03942	-2.45
85118	5.111	313.386	3.9436	.20478	.04262	.002	.04273	-1.80
85117	5.111	312.085	4.1425	.09246	.04415	.007	.04416	-2.73
85116	5.111	312.980	4.0003	.17248	.04309	.003	.04317	-1.99
85115	5.111	312.558	4.0642	.14295	.04358	.005	.04362	-2.29
85114	5.111	311.923	4.1713	.11614	.04409	.007	.04408	-3.52
85113	5.204	312.042	4.4616	.11646	.04704	.006	.04704	-3.02
85112	5.204	313.007	4.2601	.20475	.04513	.003	.04524	-2.77
85111	5.204	312.519	4.3558	.17245	.04583	.003	.04589	-3.35
85110	5.204	312.071	4.4548	.14263	.04624	.004	.04625	-4.65
85109	5.427	312.095	5.5904	.11681	.05962	.007	.05964	.34
85108	5.427	312.909	5.1924	.20515	.05547	.004	.05566	-.08
85107	5.427	312.497	5.3762	.17287	.05626	.004	.05637	-1.96
85106	5.427	312.524	5.3651	.14388	.05789	.005	.05800	1.10
85105	5.417	313.140	5.0542	.24013	.05482	.003	.05506	1.27
85104	5.418	312.429	5.3524	.20441	.05518	.004	.05527	-3.57
85103	5.418	312.065	5.5454	.17217	.05688	.004	.05689	-3.76
85102	5.418	311.837	5.6833	.14262	.05770	.009	.05767	-4.49
85101	5.499	312.754	5.6999	.23993	.06068	.003	.06087	.77
85100	5.499	312.452	5.8855	.20502	.06256	.003	.06267	1.14
85099	5.499	312.430	5.8996	.17307	.06433	.005	.06444	3.67
85098	5.499	311.620	6.5363	.14255	.06516	.006	.06507	-2.14
85097	5.576	312.283	6.6322	.20452	.06744	.004	.06752	.78
85096	5.576	311.910	6.9576	.17228	.06822	.004	.06820	-.39
85095	5.576	311.810	7.0474	.14281	.06930	.006	.06926	.67
85094	5.576	311.444	7.3857	.11599	.07008	.010	.06997	.38
85093	5.603	312.282	6.8541	.20474	.06877	.004	.06885	1.16
85092	5.603	311.992	7.1066	.17243	.06897	.004	.06897	-.03
85091	5.603	311.693	7.3723	.14280	.07008	.007	.07002	.48
85090	5.604	311.488	7.5572	.11601	.07084	.008	.07075	1.05
85089	5.671	312.441	7.2406	.23953	.06933	.003	.06945	.10
85088	5.671	312.179	7.4552	.20444	.06953	.004	.06957	-.39
85087	5.671	311.801	7.7586	.17217	.07028	.005	.07024	.04
85086	5.672	311.720	7.8248	.14265	.06992	.007	.06987	-.56
85085	5.770	312.490	7.8348	.23955	.06920	.003	.06931	-1.38
85084	5.770	312.170	8.0535	.20458	.06898	.004	.06901	-1.90
85083	5.770	311.442	8.5041	.17249	.06910	.005	.06905	-1.63
85082	5.770	311.609	8.4069	.14270	.06976	.007	.06972	-.73
85081	5.830	312.513	8.1296	.23963	.06921	.003	.06931	-1.46
85080	5.830	312.199	8.3183	.20457	.06938	.003	.06941	-1.23
85079	5.830	311.858	8.5103	.17222	.06893	.003	.06891	-1.82
85078	5.830	311.788	8.5483	.14270	.06959	.005	.06957	-.84
85077	5.924	312.939	8.2861	.27743	.06883	.002	.06900	-1.85
85076	5.924	312.434	8.5514	.23960	.06891	.002	.06897	-1.71
85075	5.924	312.183	8.6740	.20449	.06949	.003	.06951	-.81
85074	5.924	311.910	8.8008	.17215	.06877	.003	.06876	-1.80
85073	6.069	313.330	8.5013	.31840	.06863	.001	.06884	-1.86
85072	6.069	313.030	8.7329	.27769	.06835	.002	.06848	-2.28
85071	6.069	312.630	8.8986	.23990	.06894	.002	.06900	-1.38
85070	6.069	312.361	9.0037	.20471	.06884	.003	.06886	-1.51
85069	6.069	312.057	9.1176	.17264	.06930	.004	.06930	-.82
85068	6.209	313.149	9.0398	.31800	.06862	.001	.06872	-1.70
85067	6.209	312.903	9.1253	.27756	.06893	.002	.06899	-1.27
85066	6.209	312.603	9.2256	.23979	.06897	.002	.06900	-1.24
85065	6.209	311.863	9.4564	.20472	.06902	.003	.06902	-1.26
85064	6.244	314.216	8.7263	.31905	.06883	.002	.06919	-1.23
85063	6.244	313.237	9.0856	.27633	.06830	.002	.06840	-2.16
85062	6.244	312.994	9.1674	.23871	.06825	.002	.06831	-2.26
85061	6.244	312.566	9.3050	.20357	.06838	.003	.06840	-2.13
85060	6.716	314.753	9.4612	.45519	.06923	.001	.06939	-.73
85059	6.716	313.885	9.6705	.36013	.06947	.001	.06949	-.79
85058	6.716	313.249	9.8145	.27657	.06956	.002	.06953	-.97
85057	6.716	312.504	9.9738	.20386	.07008	.003	.07005	-.59
85056	7.163	315.859	9.7634	.45906	.07124	.001	.07134	1.68
85055	6.593	314.022	9.4674	.36015	.07068	.001	.07077	1.23
85054	7.163	313.425	10.2187	.27687	.07127	.002	.07117	.20
85053	7.163	313.000	10.2916	.20415	.07144	.003	.07136	.16
85052	8.211	315.405	10.6367	.56036	.07305	.001	.07272	.32
85051	8.212	314.630	10.7374	.45492	.07370	.001	.07341	.64
85050	8.211	313.835	10.8374	.35992	.07391	.002	.07368	.36
85049	8.212	313.032	10.9366	.27607	.07415	.002	.07401	.11
85048	9.431	316.074	11.1319	.61931	.07657	.001	.07600	1.27
85047	9.432	315.284	11.2129	.50825	.07715	.001	.07666	1.46

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Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 325 K W/m.K	deviation from correlation percent
85046	9.432	314.756	11.2662	.40874	.07777	.001	.07734	1.89
85045	9.432	313.377	11.4026	.31677	.07712	.001	.07689	.11
85040	11.269	316.248	11.7116	.67838	.08027	.009	.07951	.49
85039	11.269	315.470	11.7746	.56170	.08075	.001	.08012	.60
85038	11.270	314.704	11.8364	.45528	.08082	.001	.08031	.20
85037	11.271	314.003	11.8923	.36056	.08123	.001	.08085	.27
85036	13.578	316.056	12.2548	.67678	.08437	.001	.08356	-.45
85035	13.578	315.417	12.2977	.56072	.08482	.001	.08413	-.26
85034	13.578	314.603	12.3522	.45521	.08509	.001	.08456	-.39
85033	13.578	314.061	12.3882	.36073	.08535	.001	.08493	-.38
85032	16.869	316.350	12.7900	.67867	.09006	.001	.08914	-.38
85031	16.869	315.570	12.8341	.56242	.09057	.001	.08981	-.18
85030	16.869	314.803	12.8773	.45616	.09055	.001	.08995	-.56
85029	16.868	314.136	12.9146	.36056	.09054	.002	.09008	-.88
85028	21.226	314.309	13.4370	.36149	.09684	.002	.09634	-.82
85027	21.227	316.080	13.3516	.67871	.09598	.002	.09510	-1.01
85026	21.227	315.357	13.3866	.56194	.09655	.001	.09583	-.70
85025	21.229	314.639	13.4214	.45526	.09649	.002	.09592	-1.05
85024	26.236	315.862	13.8473	.80670	.10239	.001	.10157	-.88
85023	26.236	315.135	13.8783	.67867	.10255	.001	.10189	-.98
85022	26.236	314.700	13.8968	.56193	.10273	.001	.10216	-.96
85021	26.237	313.834	13.9337	.45514	.10273	.001	.10234	-1.26
85020	32.898	314.272	14.4191	.45567	.10970	.001	.10924	-1.15
85019	32.897	315.836	14.3600	.80604	.10958	.001	.10879	-.77
85018	32.898	315.195	14.3842	.67830	.10984	.001	.10919	-.73
85017	32.897	314.436	14.4128	.56114	.10983	.001	.10933	-.98
85016	41.600	316.300	14.8765	.94484	.11775	.001	.11691	-.42
85015	41.600	315.651	14.8983	.80583	.11783	.001	.11712	-.53
85014	41.598	314.843	14.9253	.67776	.11804	.001	.11749	-.58
85013	41.594	314.511	14.9361	.56098	.11815	.002	.11767	-.57
85012	52.114	315.977	15.4056	.94518	.12695	.001	.12624	.23
85011	52.101	315.292	15.4258	.80568	.12702	.001	.12643	.12
85010	52.090	314.743	15.4418	.57851	.12719	.001	.12670	.12
85009	52.074	314.133	15.4595	.56149	.12737	.001	.12699	.11
85008	64.284	315.536	15.9107	.94339	.13618	.001	.13562	.71
85007	64.258	315.223	15.9188	.80575	.13637	.001	.13586	.78
85006	64.267	314.630	15.9350	.67815	.1367C	.001	.13628	.88
85005	64.269	314.152	15.9482	.56092	.13695	.001	.13661	.94
85004	68.124	315.798	16.0419	.94451	.13904	.001	.13845	1.05
85003	68.123	315.147	16.0592	.80528	.13923	.001	.13875	1.03
85002	68.121	314.575	16.0745	.67839	.13985	.001	.13946	1.33
85001	68.120	313.879	16.0931	.56189	.14024	.001	.13995	1.44
78125	2.580	315.282	1.2097	.14275	.02620	.003	.02586	-3.70
78124	2.580	314.669	1.2142	.11610	.02605	.004	.02577	-4.12
78123	2.580	314.116	1.2192	.09222	.02601	.006	.02579	-4.11
78122	2.580	313.470	1.2230	.07103	.02627	.013	.02612	-2.88
78121	5.386	313.851	4.7000	.27624	.05131	.010	.05166	1.59
78120	5.386	313.411	4.8213	.23886	.05241	.004	.05268	1.20
78119	5.386	313.264	4.8686	.20418	.05397	.004	.05421	3.12
78118	5.386	313.035	4.9423	.17211	.05528	.004	.05548	4.01
78117	5.386	312.901	4.9884	.14273	.05654	.007	.05671	5.29
78116	5.386	312.630	5.0883	.11618	.05773	.009	.05785	5.45
78115	5.492	313.283	5.3893	.23897	.06008	.004	.06040	4.65
78114	5.492	313.023	5.5132	.20417	.06183	.004	.06209	5.39
78113	5.492	312.802	5.6292	.17211	.06353	.006	.06373	6.20
78112	5.492	312.702	5.6880	.14275	.06454	.007	.06472	6.83
78111	5.492	312.541	5.7841	.11616	.06581	.010	.06595	7.32
78110	5.570	313.209	5.9191	.23904	.06512	.004	.06547	4.95
78109	5.570	313.050	6.0179	.20416	.06627	.007	.06658	5.36
78108	5.571	312.735	6.2354	.17214	.06758	.008	.06779	4.73
78107	5.571	312.613	6.3253	.14279	.06808	.008	.06825	4.49
78106	5.571	312.552	6.3715	.11615	.06942	.010	.06957	5.88
78105	5.602	313.181	6.1561	.23910	.06670	.005	.06706	4.52
78104	5.602	313.013	6.2709	.20415	.06757	.006	.06787	4.49
78103	5.602	312.859	6.3812	.17209	.06871	.006	.06896	4.96
78102	5.602	312.694	6.5062	.14276	.06929	.008	.06949	4.60
78101	5.602	312.525	6.6393	.11618	.06896	.011	.06911	3.01
78100	5.633	313.310	6.2907	.23908	.06757	.004	.06798	4.45
78099	5.633	313.221	6.3516	.20424	.06868	.005	.06906	5.37
78098	5.633	312.929	6.5666	.17219	.06920	.006	.06948	4.09
78097	5.633	312.704	6.7417	.14283	.06974	.008	.06995	3.44
78096	5.633	312.570	6.8520	.11620	.06989	.010	.07005	2.87
78095	5.736	313.253	7.0596	.20429	.06858	.005	.06897	.20
78094	5.736	312.657	7.5128	.11620	.06844	.010	.06861	-1.94
78093	5.737	313.187	7.1154	.20434	.06900	.005	.06936	.51
78092	5.737	312.924	7.3135	.17222	.06868	.006	.06894	-.89
78091	5.737	312.745	7.4513	.14282	.06830	.008	.06850	-1.95

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 325 K W/m.K	deviation from correlation percent
86145	.212	322.509	.0799	.03659	.02449	.014	.02479	-1.34
86144	.212	325.164	.0794	.11447	.02487	.004	.02485	-1.09

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86143	.212	324.231	.0796	.09091	.02488	.004	.02497	-.60
86142	.212	323.528	.0799	.07005	.02484	.006	.02502	-.42
86141	.212	322.741	.0802	.05187	.02417	.010	.02444	-2.79
86140	.778	322.892	.3044	.05202	.02502	.008	.02527	-1.55
86139	.779	324.818	.3025	.11454	.02551	.003	.02553	-.48
86138	.779	324.104	.3032	.09095	.02544	.004	.02554	-.44
86137	.779	323.142	.3044	.06997	.02529	.005	.02551	-.60
86136	1.326	324.110	.5361	.09118	.02616	.005	.02626	.11
86135	1.325	324.425	.5354	.11439	.02589	.003	.02595	-1.06
86134	1.327	325.134	.5341	.14058	.02621	.002	.02619	-.12
86133	1.327	325.667	.5329	.16949	.02622	.002	.02615	-.30
86132	2.422	323.528	1.0690	.09096	.02751	.004	.02765	-.00
86131	2.422	324.158	1.0656	.11453	.02771	.003	.02779	.53
86130	2.422	324.601	1.0631	.14064	.02780	.003	.02784	.73
86129	2.422	325.203	1.0598	.16956	.02759	.002	.02757	-.20
86128	2.422	326.009	1.0555	.20099	.02772	.001	.02762	.03
86127	3.089	323.991	1.4451	.11471	.02871	.003	.02879	.05
86126	3.089	325.322	1.4332	.14043	.02873	.002	.02870	-.12
86125	3.089	325.307	1.4333	.16954	.02898	.002	.02896	.75
86124	3.089	325.584	1.4309	.20086	.02888	.001	.02883	.35
86123	3.998	324.024	2.0674	.14075	.03126	.002	.03129	1.11
86122	4.000	324.589	2.0582	.16946	.03127	.002	.03128	1.19
86121	4.000	325.140	2.0486	.20092	.03137	.001	.03136	1.56
86120	4.000	325.733	2.0390	.23501	.03135	.001	.03132	1.55
86119	4.436	324.464	2.4204	.16965	.03300	.002	.03300	1.82
86118	4.438	324.965	2.4102	.20132	.03301	.002	.03301	1.99
86117	4.436	325.494	2.3954	.23544	.03328	.001	.03328	2.97
86116	4.438	326.066	2.3831	.27203	.03300	.001	.03300	2.30
86115	4.927	323.930	2.9222	.16970	.03549	.002	.03542	1.77
86114	4.927	324.510	2.8996	.20125	.03555	.002	.03552	2.38
86113	4.928	325.048	2.8796	.23526	.03552	.001	.03552	2.68
86112	4.928	325.295	2.8704	.27201	.03543	.001	.03545	2.60
86111	5.352	324.150	3.4325	.20158	.03871	.002	.03858	2.41
86110	5.349	324.621	3.4001	.23581	.03857	.001	.03851	2.75
86109	5.349	325.147	3.3700	.27270	.03855	.001	.03857	3.36
86108	5.350	326.750	3.2859	.31231	.03817	.001	.03840	4.20
86107	5.660	323.776	3.9290	.20105	.04175	.002	.04144	1.47
86106	5.660	324.289	3.8840	.23531	.04146	.002	.04128	1.83
86105	5.661	324.542	3.8632	.27220	.04130	.002	.04119	1.94
86104	5.661	324.907	3.8332	.31153	.04123	.002	.04121	2.47
86103	5.887	323.874	4.3381	.20136	.04479	.003	.04440	1.58
86102	5.887	324.053	4.3169	.23559	.04444	.003	.04411	1.30
86101	5.888	324.312	4.2883	.27213	.04410	.002	.04387	1.21
86100	5.888	324.771	4.2373	.31182	.04377	.002	.04369	1.65
86099	6.127	323.525	4.9210	.20124	.04873	.003	.04801	.05
86098	6.127	323.874	4.8617	.23570	.04841	.002	.04788	.69
86097	6.127	324.345	4.7859	.27279	.04785	.002	.04755	1.19
86096	6.127	324.549	4.7545	.31182	.04708	.002	.04688	.27
86095	6.261	323.904	5.1946	.23619	.05104	.033	.05044	.84
86094	6.261	324.325	5.1138	.27338	.05019	.026	.04983	.82
86093	6.261	324.505	5.0808	.31283	.05021	.021	.04995	1.55
86092	6.261	324.897	5.0115	.35449	.04951	.024	.04946	1.61
86091	6.261	325.266	4.9495	.39955	.04866	.020	.04879	1.21
86090	6.271	325.846	4.8784	.40305	.04952	.020	.04993	4.52
86089	6.271	324.760	5.0596	.35514	.04968	.024	.04955	1.08
86088	6.271	324.005	5.2008	.31212	.05000	.029	.04945	-1.24
86087	6.271	323.494	5.3053	.27176	.05046	.035	.04960	-2.47
86086	6.460	324.172	5.6801	.31317	.05402	.032	.05349	-.02
86085	6.460	326.309	5.2373	.55170	.05123	.014	.05197	3.15
86084	6.461	325.022	5.4903	.44760	.05200	.017	.05201	-.29
86083	6.461	324.185	5.6790	.35454	.05333	.025	.05281	-1.29
86082	6.461	323.175	5.9384	.27173	.05495	.038	.05372	-2.82
86081	6.785	325.811	6.1799	.55226	.05640	.014	.05698	.41
86080	6.785	324.856	6.4330	.44793	.05742	.020	.05731	-1.57
86079	6.786	323.931	6.7035	.35471	.05827	.028	.05749	-3.73
86078	6.786	323.040	6.9817	.27180	.05910	.041	.05768	-5.59
86077	6.878	325.765	6.4445	.55231	.05770	.015	.05826	-.03
86076	6.879	324.914	6.6799	.44815	.05895	.015	.05889	-1.06
86075	6.879	324.042	6.9369	.35488	.05987	.002	.05917	-2.61
86074	6.879	323.136	7.2205	.27185	.06056	.002	.05924	-4.43
86073	7.178	325.695	7.2393	.55240	.06125	.002	.06175	-.31
86072	7.179	324.714	7.5164	.44778	.06185	.001	.06166	-2.00
86071	7.179	323.969	7.7304	.35489	.06270	.001	.06204	-2.39
86070	7.179	323.059	7.9941	.27201	.06301	.002	.06188	-3.79
86069	7.413	325.677	7.7714	.55245	.06298	.001	.06341	-.36
86068	7.413	324.723	8.0228	.44808	.06341	.001	.06325	-1.65
86067	7.414	323.985	8.2163	.35488	.06386	.002	.06331	-2.27
86066	7.414	323.084	8.4486	.27205	.06424	.002	.06332	-3.09
86065	7.615	326.504	7.9592	.66735	.06338	.001	.06429	.24
86064	7.615	325.489	8.2063	.55178	.06410	.001	.06437	-.56
86063	7.616	324.602	8.4203	.44779	.06455	.001	.06435	-1.34
86062	7.616	323.783	8.6138	.35410	.06447	.001	.06394	-2.69
86061	8.061	326.641	8.6364	.66782	.06562	.001	.06634	.96
86060	8.061	325.669	8.8334	.55261	.06623	.001	.06649	.48
86059	8.062	324.766	9.0121	.44807	.06655	.001	.06647	-.21

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86058	8.063	323.950	9.1694	.35472	.06669	.001	.06639	-.97
86057	8.771	327.097	9.3383	.67155	.06869	.001	.06922	2.45
86056	8.772	326.417	9.4455	.55622	.06924	.001	.06955	2.44
86055	8.772	325.389	9.5038	.45163	.06969	.001	.06976	1.97
86054	8.772	324.053	9.8030	.35529	.06952	.001	.06940	.38
86053	9.521	329.172	9.7680	.67794	.07179	.001	.07224	4.49
86052	9.521	327.339	9.8764	.56171	.07245	.001	.07272	4.53
86051	9.522	327.636	9.8384	.45856	.07338	.001	.07371	6.02
86050	9.523	328.307	9.7513	.36923	.07511	.001	.07560	8.82
86049	10.691	327.433	10.4926	.67420	.07464	.001	.07461	2.91
86048	10.690	327.360	10.4997	.55976	.07529	.001	.07526	3.69
86047	10.690	325.038	10.7330	.44961	.07477	.001	.07477	1.18
86046	10.691	323.933	10.8417	.35466	.07446	.001	.07454	-.07
86045	11.988	327.970	10.9448	.67578	.07803	.001	.07778	3.20
86044	11.988	327.699	10.9682	.56396	.07926	.001	.07902	4.52
86043	11.989	326.348	11.0839	.45529	.07911	.001	.07897	3.42
86042	11.989	325.540	11.1521	.36007	.07870	.002	.07964	2.37
86041	11.990	324.688	11.2238	.36161	.07878	.001	.07882	1.91
86040	14.469	324.292	11.8818	.35399	.08232	.001	.08245	-.54
86039	14.469	326.347	11.7427	.66440	.08124	.001	.08101	-.76
86038	14.470	325.441	11.8045	.54972	.08148	.001	.08140	-.96
86037	14.470	324.670	11.8567	.44582	.08159	.001	.08165	-1.24
86036	17.218	324.214	12.3939	.35405	.08623	.001	.08639	-1.80
86035	17.217	324.757	12.3623	.44685	.08665	.001	.08670	-1.06
86034	17.218	326.145	12.2819	.66439	.08575	.001	.08552	-1.49
86033	17.217	325.425	12.3237	.54970	.08608	.001	.08599	-1.43
86032	20.957	324.063	12.9279	.44837	.09272	.001	.09293	-.97
86031	20.957	326.081	12.8271	.79235	.09190	.001	.09166	-1.10
86030	20.957	325.404	12.8610	.66703	.09227	.001	.09218	-.95
86029	20.957	325.014	12.8805	.55392	.09296	.001	.09296	-.35
86028	25.559	323.871	13.4388	.44848	.09871	.001	.09896	-1.04
86027	25.563	325.636	13.3617	.79042	.09761	.001	.09747	-1.60
86026	25.563	324.837	13.3969	.66493	.09789	.001	.09793	-1.57
86025	25.564	324.029	13.4324	.54996	.09783	.001	.09805	-1.90
86024	31.503	326.318	13.8558	.92756	.10413	.001	.10384	-1.49
86023	31.503	325.408	13.8912	.79064	.10442	.001	.10433	-1.47
86022	31.502	324.644	13.9209	.66505	.10480	.001	.10488	-1.31
86021	31.503	324.054	13.9438	.55078	.10479	.001	.10500	-1.49
86020	38.525	323.917	14.4355	.55208	.11265	.001	.11288	-.49
86019	38.525	326.025	14.3619	.92854	.11136	.001	.11114	-1.11
86018	38.525	325.271	14.3882	.79158	.11161	.001	.11155	-1.07
86017	38.525	323.442	14.4521	.66734	.11227	.001	.11260	-.95
86016	47.479	323.767	14.9449	.55230	.12037	.001	.12061	-.33
86015	47.478	327.091	14.8403	.92575	.11864	.001	.11822	-1.01
86014	47.478	324.947	14.9078	.79107	.11984	.001	.11985	-.49
86013	47.479	324.170	14.9322	.66567	.12020	.001	.12037	-.38
86012	51.754	326.213	15.0803	1.07548	.12322	.001	.12298	-.10
86011	51.759	325.387	15.1054	.92795	.12334	.001	.12326	-.19
86010	51.760	324.761	15.1243	.79138	.12357	.001	.12362	-.15
86009	51.757	324.049	15.1456	.66534	.12348	.001	.12366	-.38
86008	64.209	325.860	15.6253	1.07540	.13313	.001	.13298	.81
86007	64.207	325.163	15.6443	.92781	.13328	.001	.13325	.77
86006	64.205	324.496	15.6624	.79169	.13330	.001	.13339	.64
86005	64.202	324.124	15.6724	.66649	.13331	.001	.13346	.57
86004	67.171	325.753	15.7411	1.07460	.13499	.001	.13486	.75
86003	67.176	325.167	15.7569	.92731	.13515	.001	.13512	.74
86002	67.175	324.588	15.7724	.79101	.13515	.001	.13522	.62
86001	67.174	323.892	15.7910	.66552	.13530	.001	.13549	.58

5. Propane Results

A total of 400 points are given in Table 5. The results are reported in [12]. The computer programs developed for the thermal conductivity surface of propane are shown below. The equation of state used for propane is given in [13].

```
      FUNCTION THERMR(DD,T)
C     PROPANE THERMAL CONDUCTIVITY, RODER AND CASTRO
      DIMENSION GT(9),ET(8),FT(4),G(7)
      DATA (NTR=1)
      IF(NTR.EQ.0) GO TO 1
      GT(1)=-1.0893811033E+06
      GT(2)= 8.3432978294E+05
      GT(3)=-2.2709027355E+05
      GT(4)= 1.6678663676E+04
      GT(5)= 4.3473205647E+03
      GT(6)=-1.1777846709E+03
      GT(7)= 1.2154258330E+02
      GT(8)=-6.0405969210E+00
      GT(9)= 1.2073736806E-01
      ET(1)=-1.0924494641E+01
      ET(2)=-9.5984868950E-02
      ET(3)= 1.4806220800E+01
      ET(4)= 2.5545815041E+04
      ET(5)=-1.8740978557E+04
      ET(6)= 1.2697095137E+03
      ET(7)= 1.3890247487E+02
      ET(8)=0.221
      FT(1)=-1.1498131307E+00
      FT(2)= 7.8853122149E-01
      FT(3)=1.12
      FT(4)=358.9
      EM=44.10
      G(1)=-.578825E+1
      G(2)= .181340E+3
      G(3)= .963981E+1
      G(4)=-.130794E+4
      G(5)= .114746E+1
      G(6)=-.982209E+2
      G(7)= .476504E+4
      NTR=0
    1 CONTINUE
C  RETURNS TC IN MW/M.K , T IN K, D IN G/CM**3
      D=DD*EM/1000.
      TF=T**(1./3.)
      TFF=T**(-4./3.)
      SUM=0
      DO 20 I=1,9
      TFF=TFF*TF
   20 SUM=SUM+GT(I)*TFF
      DILV=SUM
      FDCV=(FT(1)+FT(2)*(FT(3)-ALOG(T/FT(4)))**2)*D
      THE=(D-0.221)/0.221
      DDO1=D**0.1
      THEO5=THE*D**0.5
      TCCALC=G(1)+G(2)/T+G(3)*DDO1+G(4)*DDO1/T**1.5
    1 +G(5)*THEO5+G(6)*THEO5/T+G(7)*THEO5/T**2
      THERMR=DILV+FDCV+EXP(TCCALC)
      RETURN
      END
```

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Table 5. The Thermal Conductivity of Propane

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 299 K W/m.K	deviation from correlation percent
30013	1.587	296.214	11.2778	.14049	.09353	.050	.09379	-1.02
30014	1.587	296.569	11.2651	.20104	.09352	.030	.09375	-.82
30015	1.588	296.996	11.2498	.27239	.09345	.019	.09364	-.65
30016	1.588	297.539	11.2303	.35450	.09401	.013	.09415	.27
30017	1.588	298.053	11.2117	.44763	.09371	.009	.09380	.25
30018	1.588	298.685	11.1887	.55153	.09352	.007	.09355	.42
30019	1.588	299.361	11.1639	.66618	.09324	.005	.09321	.52
30020	1.588	300.134	11.1354	.79163	.09275	.004	.09265	.45
30021	1.588	300.942	11.1054	.92782	.09192	.003	.09174	.04
30022	1.588	296.995	11.2499	.27183	.09361	.019	.09380	-.48
30023	1.588	297.467	11.2329	.35411	.09344	.012	.09358	-.38
30024	1.588	297.967	11.2148	.44716	.09420	.009	.09430	.72
30025	1.588	298.643	11.1902	.55085	.09352	.006	.09355	.40
30026	1.588	299.321	11.1654	.66542	.09332	.004	.09329	.58
30027	1.588	300.133	11.1355	.79066	.09293	.004	.09283	.65
30028	1.588	300.924	11.1061	.92700	.09236	.003	.09218	.51
32001	67.559	297.552	13.2452	.54936	.14011	.009	.14028	-.22
32002	67.514	296.701	13.2587	.35296	.13991	.018	.14019	-.57
32003	67.510	298.413	13.2302	.78840	.13942	.005	.13949	-.47
32004	67.510	299.575	13.2109	1.07074	.13924	.003	.13917	-.29
32005	67.503	298.062	13.2360	.66310	.13949	.007	.13960	-.51
32006	67.496	298.954	13.2210	.92416	.13898	.004	.13899	-.64
32007	67.496	300.251	13.1995	1.22805	.13937	.003	.13922	-.02
32008	67.492	297.381	13.2471	.54923	.13967	.009	.13986	-.56
32009	59.635	297.065	13.1120	.44570	.13627	.013	.13650	-.16
32010	59.635	297.970	13.0963	.66332	.13576	.006	.13588	-.28
32011	59.635	299.124	13.0763	.92377	.13507	.004	.13506	-.47
32012	59.641	300.438	13.0537	1.22746	.13474	.003	.13457	-.36
32013	59.643	298.587	13.0858	.78789	.13543	.005	.13548	-.36
32014	52.256	297.148	12.9669	.44541	.13214	.012	.13235	-.21
32015	52.260	298.025	12.9511	.66292	.13100	.007	.13111	-.83
32016	52.264	299.178	12.9303	.92336	.13122	.004	.13120	-.33
32017	52.268	300.486	12.9068	1.22715	.13063	.003	.13046	-.40
32018	52.264	299.840	12.9184	1.06077	.13086	.003	.13076	-.41
32019	44.940	296.803	12.8173	.35281	.12742	.014	.12767	-.72
32020	44.942	297.617	12.8019	.54878	.12814	.007	.12829	.09
32021	44.945	298.753	12.7804	.78764	.12730	.005	.12733	-.22
32022	44.948	299.393	12.7683	.92322	.12706	.004	.12702	-.22
32023	44.949	300.001	12.7568	1.07002	.12642	.003	.12631	-.54
32024	44.950	300.730	12.7430	1.22717	.12643	.003	.12624	-.31
32025	37.620	296.803	12.6447	.35302	.12335	.016	.12359	-.42
32026	37.616	297.760	12.6253	.54905	.12356	.009	.12369	.07
32027	37.613	298.884	12.6027	.78815	.12294	.005	.12295	-.07
32028	37.605	300.212	12.5758	1.07053	.12222	.003	.12209	-.23
32029	37.598	299.503	12.5896	.92396	.12238	.004	.12233	-.32
32031	30.485	297.326	12.4447	.44571	.11821	.011	.11839	-.64
32032	30.485	298.339	12.4230	.66335	.11793	.006	.11800	-.53
32033	30.487	299.681	12.3942	.92398	.11757	.004	.11750	-.37
32034	23.164	296.509	12.2413	.27111	.11419	.022	.11445	.07
32035	23.164	297.351	12.2217	.44542	.11392	.011	.11409	.15
32036	23.166	298.443	12.1964	.66295	.11277	.005	.11283	-.45
32037	23.166	299.738	12.1663	.92354	.11190	.004	.11182	-.75
32038	23.166	300.473	12.1491	1.06999	.11195	.003	.11180	-.42
32039	16.446	296.703	11.9999	.27170	.10778	.021	.10801	-.91
32040	16.447	297.447	11.9809	.44621	.10795	.010	.10810	-.45
32041	16.449	298.624	11.9510	.66407	.10782	.006	.10786	-.08
32042	16.454	300.037	11.9150	.92507	.10669	.004	.10659	-.56
32043	16.456	300.846	11.8943	1.07174	.10672	.004	.10654	-.20
32044	9.542	296.255	11.7240	.20041	.10243	.031	.10270	-.53
32045	9.644	298.165	11.6690	.54982	.10248	.007	.10256	.41
32046	9.644	297.121	11.6992	.35343	.10200	.013	.10218	-.55
32047	9.646	299.586	11.6279	.78903	.10088	.004	.10082	-.50
32048	9.648	300.244	11.6088	.92514	.10073	.003	.10061	-.35
32050	3.216	297.201	11.3486	.35349	.09510	.011	.09527	-.80
32051	3.216	298.393	11.3078	.54977	.09470	.006	.09476	-.56
32052	3.217	299.778	11.2600	.78929	.09410	.004	.09403	-.42
32053	3.217	300.519	11.2343	.92538	.09343	.003	.09329	-.72
32054	3.220	301.422	11.2028	1.07206	.09322	.002	.09299	-.44

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 261 K W/m.K	deviation from correlation percent
37003	68.062	259.694	13.8871	.47623	.15786	.017	.15804	1.24
37004	68.062	260.425	13.8748	.68392	.15747	.006	.15755	1.19

37005	68.065	261.402	13.8583	.92900	.15706	.004	.15701	1.20
37006	68.065	262.423	13.8411	1.21185	.15612	.004	.15593	.89
37007	60.421	259.059	13.7860	.30640	.15372	.027	.15398	.82
37008	60.414	259.688	13.7749	.47663	.15468	.014	.15485	1.61
37009	60.414	260.400	13.7624	.68453	.15364	.007	.15372	1.15
37010	60.407	261.330	13.7461	.93021	.15314	.005	.15310	1.10
37011	60.407	262.441	13.7267	1.21355	.15217	.003	.15198	.79
37012	53.454	259.027	13.6773	.30600	.15078	.026	.15103	1.22
37013	53.457	259.647	13.6661	.47615	.15064	.014	.15081	1.31
37014	53.457	260.361	13.6532	.68386	.15000	.008	.15008	1.10
37015	53.464	261.340	13.6357	.92902	.14907	.005	.14903	.77
37016	53.464	262.415	13.6163	1.21196	.14841	.003	.14823	.65
37018	46.459	258.983	13.5604	.30615	.14620	.025	.14645	.64
37019	46.457	259.273	13.5549	.38665	.14719	.018	.14740	1.40
37020	46.459	259.977	13.5417	.57574	.14670	.010	.14683	1.29
37021	46.459	260.841	13.5255	.80235	.14595	.006	.14597	1.05
37022	46.459	261.933	13.5051	1.06666	.14529	.004	.14518	.94
37023	39.293	259.118	13.4273	.30615	.14343	.025	.14366	1.54
37024	39.292	259.638	13.4171	.47656	.14219	.013	.14235	.85
37025	39.292	260.518	13.3998	.68434	.14236	.008	.14242	1.26
37026	39.295	261.523	13.3802	.92965	.14147	.005	.14141	.96
37027	39.295	262.595	13.3592	1.21328	.14068	.003	.14049	.76
37028	32.175	259.103	13.2860	.30621	.13931	.024	.13953	1.61
37029	32.180	259.787	13.2721	.47638	.13868	.013	.13882	1.40
37030	32.180	260.587	13.2557	.68427	.13778	.007	.13783	1.03
37031	32.180	261.611	13.2346	.92974	.13740	.005	.13733	1.11
37032	32.180	262.794	13.2103	1.21304	.13638	.003	.13617	.78
37033	24.914	258.918	13.1307	.23548	.13301	.035	.13324	.28
37034	24.914	259.476	13.1186	.38731	.13466	.017	.13483	1.70
37035	24.920	260.263	13.1016	.57666	.13414	.009	.13422	1.61
37036	24.921	261.165	13.0820	.80381	.13331	.006	.13329	1.33
37037	24.920	262.344	13.0564	1.06859	.13231	.004	.13216	1.02
37038	18.290	258.924	12.9689	.23568	.13057	.034	.13079	1.79
37039	18.290	259.486	12.9560	.38734	.12994	.016	.13010	1.53
37040	18.290	260.462	12.9334	.57651	.12899	.009	.12905	1.20
37041	18.294	261.351	12.9130	.80387	.12861	.005	.12857	1.25
37042	18.294	262.439	12.8878	1.06885	.12805	.003	.12790	1.25
37043	11.364	258.951	12.7775	.23570	.12522	.033	.12543	1.58
37044	11.364	259.614	12.7610	.38739	.12479	.016	.12493	1.52
37045	11.370	260.482	12.7396	.57670	.12338	.008	.12343	.77
37046	11.370	261.461	12.7152	.80383	.12389	.005	.12384	1.59
37047	11.373	262.620	12.6863	1.06882	.12311	.003	.12295	1.46
37048	3.854	259.094	12.5322	.23563	.11919	.031	.11938	1.68
37049	3.856	259.723	12.5150	.38732	.11910	.013	.11922	1.90
37050	3.858	260.577	12.4915	.57679	.11759	.008	.11763	1.05
37051	3.862	261.674	12.4613	.80391	.11778	.005	.11771	1.72
37052	3.864	262.861	12.4283	1.06900	.11484	.003	.11466	-.22

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 227 K W/m.K	Conductivity deviation from correlation percent
31002	67.411	226.290	14.4492	.59031	.16955	.011	.16967	-.76
31003	67.413	227.015	14.4367	.80240	.16975	.007	.16975	-.44
31004	67.414	227.870	14.4219	1.04721	.16873	.005	.16859	-.80
31005	67.414	228.719	14.4073	1.32506	.16901	.003	.16873	-.40
31006	67.411	225.440	14.4638	.33344	.16967	.028	.16993	-.92
31007	67.411	225.956	14.4549	.49650	.16952	.015	.16969	-.87
31008	67.408	226.628	14.4433	.69214	.16891	.009	.16897	-1.04
31009	67.410	227.345	14.4309	.92066	.16927	.006	.16921	-.63
31010	67.413	228.136	14.4173	1.18196	.16921	.004	.16903	-.44
31011	67.411	229.207	14.3988	1.47646	.16817	.003	.16782	-.76
31012	59.530	225.816	14.3599	.41085	.16494	.019	.16513	-1.54
31013	59.535	226.423	14.3491	.59014	.16595	.011	.16604	-.75
31014	59.540	227.071	14.3377	.80221	.16600	.007	.16599	-.53
31015	59.537	227.860	14.3236	1.04705	.16551	.005	.16538	-.60
31016	59.538	228.784	14.3072	1.32499	.16501	.003	.16473	-.63
31017	52.268	225.667	14.2671	.41101	.16284	.019	.16304	-.80
31018	52.277	226.263	14.2563	.59014	.16264	.011	.16275	-.75
31019	52.278	227.052	14.2418	.80234	.16228	.007	.16227	-.73
31020	52.283	227.837	14.2275	1.04746	.16228	.005	.16215	-.49
31021	52.283	228.808	14.2097	1.32550	.16172	.003	.16145	-.55
31022	52.288	229.302	14.2007	1.47734	.16164	.003	.16130	-.45
31024	44.798	226.377	14.1488	.59026	.15876	.011	.15885	-.86
31025	44.800	227.102	14.1351	.80240	.15849	.007	.15848	-.80
31026	44.802	227.902	14.1193	1.04748	.15810	.004	.15796	-.79
31027	44.802	228.847	14.1020	1.32587	.15791	.003	.15764	-.62
31028	38.290	225.792	14.0624	.41099	.15562	.018	.15579	-.95
31029	38.291	226.408	14.0503	.59041	.15575	.009	.15583	-.66
31030	38.299	227.261	14.0337	.80241	.15509	.007	.15505	-.81
31031	38.299	227.999	14.0193	1.04764	.15481	.004	.15467	-.75
31032	38.301	228.961	14.0005	1.32584	.15444	.003	.15417	-.67
31035	30.901	226.746	13.9240	.69320	.15143	.008	.15146	-.81
31036	30.890	227.662	13.9051	.92205	.15070	.005	.15061	-.97

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal at a nominal Temperature of 196 K W/m.K	Conductivity deviation from correlation percent
31037	30.881	228.530	13.8872	1.18421	.15065	.003	.15045	-.70
31038	23.806	225.571	13.8243	.33381	.14794	.023	.14813	-.92
31039	23.803	226.127	13.8124	.49712	.14728	.012	.14739	-1.16
31040	23.806	226.823	13.7976	.69317	.14717	.008	.14719	-.98
31041	23.808	227.630	13.7805	.92219	.14672	.005	.14664	-.99
31042	23.808	228.670	13.7583	1.18401	.14666	.003	.14645	-.65
31043	16.024	225.557	13.6759	.33381	.14297	.022	.14315	-1.19
31044	16.026	226.145	13.6627	.49733	.14251	.012	.14262	-1.28
31045	16.026	226.856	13.6467	.69337	.14251	.008	.14253	-1.00
31046	16.030	227.832	13.6248	.92233	.14196	.005	.14186	-1.01
31047	16.033	228.749	13.6042	1.18457	.14201	.003	.14180	-.61
31048	9.604	225.376	13.5449	.26443	.13800	.031	.13819	-1.96
31049	9.607	225.882	13.5329	.41157	.13828	.016	.13841	-1.54
31050	9.606	226.623	13.5154	.59130	.13806	.009	.13810	-1.39
31051	9.609	227.423	13.4965	.80397	.13798	.006	.13793	-1.11
31052	9.610	228.365	13.4741	1.04937	.13790	.004	.13774	-.78
31053	2.883	225.432	13.3866	.26446	.13409	.026	.13427	-1.50
31054	2.884	225.986	13.3727	.41160	.13414	.015	.13425	-1.22
31055	2.886	226.589	13.3575	.59153	.13384	.009	.13389	-1.17
31056	2.888	227.474	13.3351	.80411	.13330	.006	.13325	-1.18
31057	2.888	228.446	13.3105	1.04963	.13307	.004	.13291	-.92
31058	2.889	228.986	13.2968	1.18497	.13293	.003	.13271	-.78

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 196 K W/m.K	Conductivity deviation from correlation percent
36001	67.881	196.026	14.9818	.78257	.18567	.007	.18566	-.08
36002	67.899	195.213	14.9963	.50144	.18656	.016	.18672	.18
36003	67.902	195.410	14.9928	.58811	.18634	.011	.18646	.12
36004	67.908	196.445	14.9747	.89010	.18592	.007	.18583	.16
36005	67.914	195.776	14.9865	.68154	.18641	.009	.18646	.25
36006	67.916	197.248	14.9607	1.12637	.18534	.005	.18509	.06
36007	61.052	195.283	14.9241	.50124	.18301	.016	.18315	-.20
36008	61.057	195.773	14.9153	.68147	.18342	.010	.18347	.16
36009	61.058	196.412	14.9039	.88970	.18274	.007	.18266	-.04
36010	61.062	197.150	14.8906	1.12638	.18240	.005	.18217	-.02
36011	61.069	197.606	14.8825	1.25526	.18232	.004	.18200	.06
36012	53.545	195.266	14.8426	.50102	.18078	.014	.18092	.31
36013	53.553	195.704	14.8346	.68129	.17952	.010	.17958	-.26
36014	53.565	196.493	14.8201	.88944	.17958	.007	.17949	-.00
36015	53.570	197.263	14.8060	1.12623	.17913	.004	.17889	-.03
36016	53.578	197.585	14.8001	1.25490	.17889	.004	.17859	-.08
36017	46.473	194.948	14.7672	.42176	.17762	.020	.17782	.19
36018	46.480	195.395	14.7588	.58834	.17692	.012	.17703	-.07
36019	46.484	196.099	14.7455	.78288	.17647	.008	.17645	-.12
36020	46.489	196.779	14.7327	1.00551	.17612	.005	.17598	-.11
36021	46.494	197.677	14.7157	1.25669	.17551	.003	.17520	-.19
36022	38.784	194.988	14.6728	.42203	.17293	.019	.17311	-.48
36023	38.787	195.514	14.6625	.58838	.17302	.012	.17311	-.26
36024	38.795	196.107	14.6510	.78287	.17284	.008	.17282	-.18
36025	38.803	196.868	14.6362	1.00578	.17246	.005	.17231	-.17
36026	38.812	197.782	14.6184	1.25712	.17179	.003	.17148	-.27
36027	30.800	194.734	14.5738	.34897	.17023	.025	.17045	.07
36028	30.803	195.167	14.5651	.50166	.16998	.014	.17012	.07
36029	30.805	195.844	14.5513	.68235	.16954	.009	.16957	.03
36030	30.808	196.543	14.5372	.89114	.16884	.005	.16875	-.15
36031	30.812	197.509	14.5176	1.12810	.16842	.004	.16817	-.08
36032	22.911	194.735	14.4633	.34928	.16589	.024	.16610	-.17
36033	22.918	195.281	14.4519	.50189	.16643	.014	.16655	.34
36034	22.921	195.960	14.4376	.68251	.16500	.009	.16501	-.29
36035	22.924	196.655	14.4229	.89137	.16473	.005	.16462	-.21
36036	22.926	197.423	14.4068	1.12861	.16437	.004	.16414	-.16
36037	16.394	194.567	14.3689	.28333	.16315	.033	.16338	.17
36038	16.394	195.058	14.3581	.42209	.16225	.018	.16240	-.20
36039	16.399	195.523	14.3480	.58870	.16237	.011	.16244	.04
36040	16.400	196.331	14.3304	.78322	.16150	.006	.16145	-.21
36041	16.404	197.129	14.3130	1.00619	.16128	.005	.16111	-.05
36042	16.406	197.466	14.3056	1.12848	.16103	.004	.16080	-.08
36043	9.045	194.614	14.2486	.28328	.15942	.032	.15963	.38
36044	9.044	195.106	14.2373	.42196	.15829	.017	.15842	-.14
36045	9.045	195.609	14.2258	.58858	.15761	.009	.15767	-.38
35046	9.045	196.354	14.2087	.78307	.15741	.007	.15736	-.21
35047	9.045	197.105	14.1915	1.00629	.15703	.005	.15687	-.16
35048	9.047	197.543	14.1815	1.12842	.15666	.004	.15644	-.23
36049	1.947	194.588	14.1235	.28353	.15546	.031	.15566	.49
36050	1.949	195.095	14.1113	.42248	.15410	.017	.15423	-.18
36051	1.950	195.614	14.0989	.58938	.15400	.010	.15405	-.03
36052	1.952	196.334	14.0816	.78445	.15353	.007	.15348	-.04
36053	1.955	197.248	14.0597	1.00784	.15295	.004	.15278	-.04
36054	1.962	197.629	14.0506	1.13019	.15264	.004	.15242	-.09

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 170 K W/m.K	Conductivity deviation from correlation percent
33001	67.127	168.188	15.4696	.29568	.19826	.037	.19874	-.48
33002	67.121	168.522	15.4635	.42482	.20009	.021	.20048	.52
33003	67.120	168.914	15.4565	.57786	.19885	.013	.19914	-.00
33004	67.114	169.452	15.4468	.75458	.19868	.009	.19882	.04
33005	67.111	170.019	15.4366	.95562	.19845	.006	.19845	.07
33006	67.111	170.833	15.4220	1.18085	.19829	.005	.19807	.18
33007	67.108	171.138	15.4165	1.30263	.19798	.004	.19769	.10
33008	59.259	168.351	15.3967	.35728	.19475	.024	.19517	-.76
33009	59.258	168.727	15.3897	.49834	.19545	.014	.19578	-.31
33010	59.264	169.099	15.3830	.66304	.19594	.010	.19617	.04
33011	59.267	169.924	15.3678	.85224	.19539	.007	.19541	-.04
33012	59.265	170.420	15.3587	1.06518	.19526	.005	.19515	.02
33013	59.273	171.148	15.3454	1.30271	.19484	.004	.19455	-.01
33014	51.755	168.276	15.3279	.35732	.19390	.025	.19433	.24
33015	51.757	168.737	15.3193	.49836	.19350	.015	.19381	.16
33016	51.752	169.257	15.3094	.66332	.19323	.011	.19341	.16
33017	51.753	169.787	15.2994	.85221	.19274	.008	.19279	.05
33018	51.747	170.418	15.2875	1.06533	.19222	.005	.19212	-.06
33019	51.764	171.196	15.2730	1.30336	.19190	.004	.19161	-.02
33020	44.330	168.303	15.2544	.35731	.19064	.025	.19105	.08
33021	44.338	168.750	15.2459	.49838	.19042	.016	.19072	.08
33022	44.344	169.233	15.2366	.66306	.18993	.010	.19011	-.04
33023	44.344	169.831	15.2250	.85202	.18989	.007	.18993	.10
33024	44.354	170.494	15.2123	1.06510	.18910	.005	.18898	-.13
33025	44.351	171.224	15.1982	1.30275	.18877	.003	.18848	-.10
33026	37.043	168.181	15.1814	.35707	.18748	.026	.18790	-.06
33027	37.054	168.649	15.1722	.49815	.18754	.016	.18785	.10
33028	37.071	169.289	15.1597	.66316	.18736	.010	.18752	.19
33029	37.078	169.838	15.1489	.85332	.18631	.007	.18635	-.22
33030	37.079	170.557	15.1346	1.06747	.18616	.005	.18603	-.09
33031	37.092	171.311	15.1197	1.30452	.18547	.004	.18517	-.24
33032	29.244	168.692	15.0854	.49892	.18423	.015	.18452	.12
33033	29.257	169.185	15.0755	.66390	.18334	.010	.18352	-.22
33034	29.262	169.912	15.0607	.85301	.18282	.007	.18284	-.28
33035	29.270	170.398	15.0508	1.06665	.18283	.005	.18274	-.13
33036	29.285	170.870	15.0413	1.18221	.18221	.004	.18202	-.33
33037	21.866	168.582	15.0015	.42523	.18068	.017	.18098	-.07
33038	21.874	169.045	14.9918	.57848	.18037	.012	.18057	-.10
33039	21.881	169.589	14.9804	.75559	.17998	.008	.18007	-.14
33040	21.898	170.209	14.9675	.95695	.17958	.005	.17954	-.17
33041	21.906	170.965	14.9516	1.18252	.17912	.004	.17892	-.19
33042	14.907	168.591	14.9148	.42518	.17779	.019	.17808	.10
33043	14.928	169.062	14.9048	.57822	.17696	.011	.17715	-.21
33044	14.935	169.633	14.8924	.75518	.17653	.007	.17660	-.26
33045	14.950	170.298	14.8781	.95638	.17629	.006	.17623	-.18
33046	14.962	171.038	14.8621	1.18166	.17571	.004	.17550	-.26
33047	7.748	168.180	14.8290	.29605	.17387	.032	.17423	-.31
33048	7.758	168.524	14.8214	.42563	.17416	.017	.17445	-.02
33049	7.771	169.025	14.8102	.57901	.17409	.011	.17428	.11
33050	7.781	169.746	14.7941	.75631	.17293	.007	.17298	-.31
33051	7.793	170.367	14.7802	.95802	.17289	.005	.17282	-.11
33052	7.802	171.165	14.7623	1.18425	.17219	.004	.17197	-.24
33053	1.042	168.057	14.7368	.29620	.16943	.031	.16980	-.99
33054	1.042	168.447	14.7277	.42570	.17109	.018	.17138	.14
33055	1.041	168.922	14.7165	.57905	.17041	.011	.17061	-.08
33056	1.041	169.624	14.7001	.75649	.16985	.008	.16992	-.15
33057	1.041	170.251	14.6854	.95825	.16920	.005	.16915	-.30
33058	1.041	171.053	14.6665	1.18431	.16865	.004	.16846	-.33

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 140 K W/m.K	Conductivity deviation from correlation percent
34001	66.728	138.618	16.0035	.33830	.21299	.031	.21351	.28
34002	66.728	138.936	15.9976	.46006	.21351	.017	.21391	.58
34003	66.741	139.456	15.9882	.60118	.21325	.013	.21345	.56
34004	66.744	139.824	15.9815	.76130	.21292	.008	.21299	.47
34005	66.744	140.286	15.9730	.94099	.21316	.005	.21305	.68
34006	66.746	140.896	15.9619	1.14119	.21276	.004	.21243	.61
34007	59.962	138.778	15.9510	.33809	.21151	.030	.21196	.60
34008	59.962	139.030	15.9463	.45990	.21139	.019	.21175	.60
34009	59.973	139.438	15.9387	.60092	.21044	.013	.21065	.23
34010	59.981	139.822	15.9316	.76100	.21139	.008	.21145	.75
34011	59.984	140.300	15.9227	.94058	.21030	.007	.21019	.34
34012	59.982	140.929	15.9110	1.14088	.21001	.004	.20968	.33
34013	51.482	138.735	15.8869	.33816	.20903	.030	.20948	.72
34014	51.487	138.894	15.8839	.45970	.20888	.019	.20928	.68
34015	51.490	139.321	15.8758	.60059	.20816	.013	.20840	.42

34016	51.487	139.865	15.8653	.76092	.20809	.009	.20814	.51
34017	51.500	140.319	15.8567	.94029	.20749	.007	.20738	.32
34018	51.507	140.921	15.8453	1.13973	.20728	.005	.20696	.34
34019	43.276	138.725	15.8211	.33830	.20502	.029	.20546	.10
34020	43.271	138.924	15.8172	.46042	.20620	.019	.20657	.72
34021	43.268	139.369	15.8084	.60160	.20495	.012	.20517	.21
34022	43.268	139.814	15.7997	.76231	.20516	.009	.20522	.41
34023	43.272	140.416	15.7879	.94308	.20507	.006	.20493	.51
34024	43.276	141.033	15.7758	1.14107	.20466	.005	.20431	.45
34026	35.897	139.049	15.7523	.46016	.20370	.018	.20402	.78
34027	35.899	139.469	15.7439	.60116	.20340	.012	.20358	.73
34028	35.912	139.989	15.7335	.76147	.20244	.009	.20244	.38
34029	35.924	140.409	15.7252	.94079	.20215	.005	.20201	.33
34030	35.926	140.985	15.7136	1.14072	.20158	.004	.20125	.19
34031	29.307	138.706	15.7009	.33841	.20167	.029	.20210	.86
34032	29.307	138.981	15.6953	.46051	.20154	.018	.20188	.86
34033	29.317	139.463	15.6854	.60198	.20060	.011	.20078	.51
34034	29.320	139.943	15.6756	.76264	.19975	.008	.19977	.21
34035	29.320	140.503	15.6641	.94333	.20007	.006	.19991	.51
34036	29.327	141.050	15.6529	1.14363	.19932	.005	.19898	.27
34037	22.775	138.679	15.6410	.33855	.19730	.028	.19773	-.13
34038	22.775	139.156	15.6310	.46065	.19854	.018	.19881	.62
34039	22.797	139.494	15.6241	.60170	.19830	.012	.19846	.58
34040	22.797	139.876	15.6161	.76208	.19728	.008	.19732	.16
34041	22.804	140.492	15.6032	.94269	.19766	.005	.19750	.51
34042	22.807	141.080	15.5908	1.14261	.19666	.005	.19632	.16
34043	15.268	138.767	15.5660	.33861	.19690	.026	.19729	1.14
34044	15.253	139.119	15.5583	.46068	.19638	.018	.19665	.97
34045	15.255	139.508	15.5499	.60185	.19546	.012	.19561	.61
34046	15.252	140.007	15.5391	.76248	.19451	.008	.19451	.26
34047	15.253	140.601	15.5262	.94249	.19409	.006	.19391	.21
34048	15.256	141.203	15.5132	1.14326	.19389	.004	.19353	.27
34049	8.458	138.716	15.4971	.33865	.19396	.028	.19435	1.02
34050	8.469	139.054	15.4897	.46059	.19243	.017	.19272	.32
34051	8.476	139.447	15.4811	.60173	.19210	.012	.19227	.26
34052	8.476	140.005	15.4687	.76260	.19228	.007	.19228	.51
34053	8.493	140.469	15.4585	.94276	.19188	.006	.19174	.44
34054	8.496	141.215	15.4420	1.14337	.19108	.005	.19072	.23
34055	2.585	138.787	15.4319	.33893	.19094	.027	.19130	.73
34056	2.585	139.170	15.4232	.46102	.18984	.016	.19008	.27
34057	2.592	139.504	15.4156	.60222	.19034	.010	.19049	.63
34058	2.595	140.055	15.4031	.76322	.18983	.007	.18981	.53
34059	2.604	140.600	15.3908	.94347	.18931	.006	.18914	.42
34060	2.610	141.265	15.3757	1.14450	.18899	.004	.18863	.45

Run Pt.	Pressure MPa	Temperature K	Density mol/L	Power W/m	Experimental Thermal Conductivity W/m.K	STAT	Adjusted Thermal Conductivity at a nominal Temperature of 112 K W/m.K	Conductivity deviation from correlation percent
35002	65.496	111.560	16.4969	.45484	.22052	.018	.22077	-.19
35003	65.500	111.859	16.4913	.57629	.22068	.012	.22076	-.09
35004	65.503	112.251	16.4840	.71290	.22006	.010	.21992	-.33
35005	65.516	112.467	16.4800	.78691	.22019	.007	.21992	-.25
35006	65.518	112.737	16.4750	.86492	.22039	.007	.21997	-.13
35007	58.233	111.160	16.4607	.34796	.21792	.025	.21840	-.57
35008	58.232	111.505	16.4541	.45478	.21788	.017	.21816	-.55
35009	58.230	111.810	16.4483	.57617	.21815	.011	.21826	-.40
35010	58.220	112.155	16.4417	.71263	.21796	.009	.21787	-.44
35011	58.220	112.372	16.4375	.78647	.21842	.008	.21821	-.21
35012	58.217	112.554	16.4340	.86435	.21798	.007	.21767	-.39
35013	58.217	112.810	16.4292	.94595	.21814	.006	.21769	-.29
35014	58.219	113.018	16.4252	1.03146	.21771	.005	.21714	-.46
35015	58.209	113.279	16.4202	1.12119	.21787	.004	.21716	-.36
35016	51.090	111.181	16.4157	.34792	.21772	.028	.21818	.20
35017	51.087	111.420	16.4111	.45456	.21744	.019	.21777	.10
35018	51.089	111.799	16.4037	.57598	.21617	.013	.21628	-.44
35019	51.090	112.152	16.3969	.71248	.21611	.009	.21603	-.43
35020	51.087	112.329	16.3934	.78636	.21600	.007	.21582	-.45
35021	51.089	112.530	16.3895	.86416	.21605	.006	.21576	-.41
35022	43.810	111.249	16.3671	.34816	.21256	.026	.21298	-1.27
35023	43.820	111.609	16.3600	.45526	.21467	.016	.21489	-.24
35024	43.816	111.974	16.3528	.57718	.21401	.013	.21402	-.50
35025	43.816	112.165	16.3490	.71369	.21427	.009	.21418	-.35
35026	43.812	112.561	16.3411	.86587	.21389	.007	.21358	-.48
35027	37.217	111.283	16.3219	.34810	.21191	.027	.21231	-.71
35028	37.225	111.566	16.3162	.45475	.21350	.018	.21374	.08
35029	37.229	111.854	16.3104	.57624	.21331	.013	.21339	.03
35030	37.242	112.700	16.2934	.86512	.21250	.007	.21212	-.24
35031	37.242	112.294	16.3016	.71321	.21238	.009	.21222	-.35
35032	29.922	111.342	16.2693	.34831	.21125	.027	.21161	-.02
35033	29.926	111.601	16.2640	.45509	.21156	.018	.21178	.17
35034	29.932	111.824	16.2595	.57639	.21111	.012	.21121	-.02
35035	29.945	112.282	16.2501	.71333	.21071	.009	.21056	-.14
35036	29.950	112.527	16.2451	.78763	.21040	.008	.21012	-.26

35037	29.949	112.732	16.2409	.86560	.21053	.007	.21014	-.16
35039	23.069	111.133	16.2234	.34796	.20982	.023	.21029	.25
35040	23.078	111.441	16.2170	.45494	.20875	.018	.20905	-.22
35041	23.085	111.923	16.2069	.57696	.20900	.012	.20904	-.03
35042	23.095	112.307	16.1989	.71384	.20913	.008	.20897	.09
35043	23.100	112.708	16.1905	.86587	.20892	.006	.20855	.05
35044	15.502	111.205	16.1638	.34820	.20671	.024	.20713	-.11
35045	15.506	111.565	16.1560	.45514	.20628	.016	.20651	-.26
35046	15.512	111.921	16.1484	.57703	.20719	.012	.20723	.23
35047	15.516	112.184	16.1427	.71331	.20634	.009	.20624	-.14
35048	15.520	112.720	16.1312	.86567	.20673	.006	.20636	.14
35049	8.380	111.246	16.1054	.34831	.20376	.025	.20415	-.43
35050	8.383	111.550	16.0987	.45524	.20440	.017	.20463	-.07
35051	8.383	111.886	16.0913	.57688	.20465	.011	.20471	.11
35052	8.386	112.305	16.0821	.71365	.20466	.009	.20450	.19
35053	8.388	112.489	16.0780	.78756	.20447	.008	.20422	.13
35054	8.391	112.756	16.0721	.86595	.20452	.006	.20413	.20
35055	2.388	111.128	16.0576	.34812	.20356	.025	.20401	.42
35056	2.394	111.535	16.0484	.45518	.20252	.017	.20276	-.02
35057	2.394	111.915	16.0398	.57712	.20239	.012	.20243	-.01
35058	2.394	112.280	16.0316	.71371	.20239	.009	.20225	.05
35059	2.396	112.461	16.0275	.78764	.20280	.007	.20257	.29
35060	2.404	112.709	16.0219	.86595	.20242	.007	.20206	.15

6. References

[1]   Roder, H. M. A transient hot wire thermal conductivity apparatus for fluids. J. Res. Nat. Bur. Stand. (U.S.). 86(5): 457-493; 1981 September-October.

[2]   de Castro, C. A. N.; Roder, H. M. Absolute determination of the thermal conductivity of argon at room temperature and pressures up to 68 MPa. J. Res. Nat. Bur. Stand. (U.S.). 86(3): 293-307; 1981 May-June.

[3]   de Castro, C. A. N.; Roder, H. M. The thermal conductivity of argon at 300.65 K. Evidence for a critical enhancement? Sengers, J. V., ed. Proceedings of the 8th symposium on thermophysical properties; 1981 June 15-18; Gaitherburg, Maryland. ASME, New York; 1982. 241-246.

[4]   Roder, H. M. The thermal conductivity of oxygen. J. Res. Nat. Bur. Stand. (U.S.). 87(4): 279-310; 1982 July-August.

[5]   Roder, H. M. Thermal conductivity of normal hydrogen. Hust, J. G., ed. Thermal Conductivity 17; 1981 June 15-18; Gaithersburg, Maryland. Plenum, New York; 1983. 257-264.

[6]   Roder, H. M. Thermal conductivity of parahydrogen. J. Chem. Engr. Data (in press).

[7]   Roder, H. M. The thermal conductivity of hydrogen for temperatures between 78 and 310 K with pressures to 70 MPa. Internat. J. Thermophys. (in press).

[8]   McCarty, R. D. Interactive fortran IV computer programs for the thermodynamic and transport properties of selected cryogens [fluids pack]. Nat. Bur. Stand. (U.S.) Tech. Note 1025; 1980 October. 112 p.

[9]   Roder, H. M. The thermal conductivity of methane for temperatures between 110 and 310 K with pressures to 70 MPa. Submitted to Internat. J. Thermophys.

[10]   Roder, H. M.; Nieto de Castro, C. A. The thermal conductivity of ethane for temperatures between 110 and 325 K with pressures to 70 MPa. Submitted to 9th European conf. on thermophysical properties. Proceedings to be published in High Temperatures-High Pressures.

[11]   Goodwin, R. D.; Roder, H. M.; Straty, G. C. Thermophysical properties of ethane, from 90 to 600 K at pressures to 700 bar. Nat. Bur. Stand. (U.S.) Tech. Note 684; 1976 August. 326 p.

[12]   Roder, H. M.; de Castro, C. A. N. Thermal conductivity of liquid propane. J. Chem. Engr. Data 27(1): 12-15; 1982 January.

[13]   Goodwin, R. D. Unpublished; an improved version very similar to: Goodwin, R. D. Nat. Bur. Stand. (U.S.) NBSIR 77-860; 1977 July; Goodwin, R. D. Adv. Chem. Ser. No. 182; 1979. 345; and Goodwin, R. D.; Haynes, W. M. Thermophysical properties of propane from 85 to 700 K at pressures to 70 MPa. Nat. Bur. Stand. (U.S.) Monograph 170; 1982 April. 249 p.

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11. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)*

The experimental measurements of thermal conductivity as obtained in a transient hot wire apparatus for hydrogen, methane, ethane and propane are recorded.

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ethane; hot wire; hydrogen; measurements; methane; propane; thermal conductivity; transient.

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